

Make an Old-School iMovie • Apple's New Retail Strategy • Why the Cube Faltered

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MacAddict

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AUGUST 2001 NO. 60

50 MAC PROBLEMS SQUASHED



Stamp Out Hardware, Software, System, and Networking Bugs

- 7 Surefire Steps to Solving Any Crisis
- 8 Disaster-Prevention Tips
- Decode Cryptic Error Messages

PLUS:

Pro Tips on Setting Up
a Mac Audio Studio

Replace Mac OS X's
Aqua Interface

10 (Legal) Ways to
Score Free Software

REVIEWED: Myst III: Exile, Adobe's After Effects 5 and Acrobat 5,
Director 8.5, Sound Blaster Live, and 2 CD Burners



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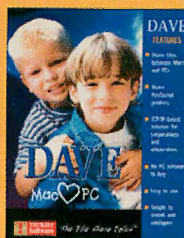
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highlights



20 50 Biggest Mac Problems (and How to Squash 'Em!)

Sad Macs? Bombs? Macs that won't boot? Operating systems that won't cooperate? These are the visions that plague Mac users with nightmares. Get the solutions to your most vexing Mac problems and finally get a good night's sleep. **by Rik Myslewski**

RAID?! Oh, damn—that crashed, too...

32 10 Surefire Ways to Never Pay for Software Again

Short on cash lately? Lose your job in the dot-com landslide? Are you just plain cheap? We divulge 10 methods to avoid paying for software. Sound too good to be true? Get this: They're all legal, too. **by David Reynolds**



A shareware developer's fantasy of what happens when you don't pay up.



Buggy bits by Oliver Wolfson.

how to

60 Make an Old-School iMovie

If even the lamest, worst-done home movies look too professional for your taste, fear not—we'll show you how to give them that even more questionable Super-8, home-movie look. **by Cathy Lu**



Gene Simmons, eat your heart out!



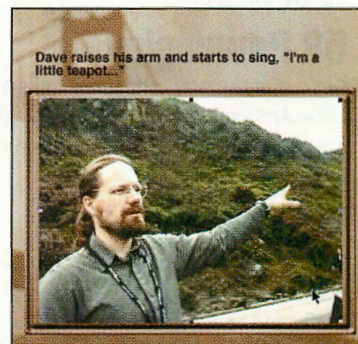
64 Install the X Window System

Lickable, shmickable—if you're a dyed-in-the-wool Unix fan, no amount of throbbing and glowing will ever replace the austere splendor of X Windows. Here's how to get the increasingly ill-named XFree86 running on Mac OS X. **by David Reynolds**

No, this is *not* a subliminal attempt to introduce XXX into the magazine.

68 Make MovieWorks Presentations

If you just can't face using PowerPoint or paying for Director, MovieWorks might be a good compromise. We put MovieWorks through its paces as we build a show about our trip to the Golden Gate Bridge. **by Andrew Tokuda**



David warns his followers about the Feds lying in wait over the ridge.

REPRINTS

For reprints, contact RMS at 717-399-1900.

Volume 6, Issue 8

MacAddict (ISSN 1088-548X) is published monthly by Imagine Media, Inc., 150 North Hill Dr., Brisbane, CA 94005, USA. Periodical-class postage paid at Brisbane, CA, and at additional mailing offices. Newsstand distribution is handled by Curtis Circulation Co. Basic subscription rates: one year (12 issues + 12 CD-ROMs) U.S. \$39.90, Canada \$43.95, U.S. prepaid funds only. Canadian price includes postage and GST 128220688. IPM 0962392. Outside the U.S. and Canada, price is \$53.95, U.S. prepaid funds only. POSTMASTER: Send address changes to *MacAddict*, P. O. Box 58251, Boulder, CO 80328-8251. Imagine Media, Inc. also publishes *Maximum PC*, *Business 2.0*, *PC Gamer*, *Next Generation*, and *PSM*. Entire contents copyright 2000, Imagine Media, Inc. All rights reserved. Reproduction in whole or in part is prohibited. Imagine Media, Inc. is not affiliated with the companies or products covered in *MacAddict*. Ride-Along enclosed in the following editions: A3, B, B1, B2, B3 PRODUCED IN THE UNITED STATES OF AMERICA.

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8 Editor's Note

Believe it or not, iTools is cool.

10 Letters

On Mac OS X, the perfect iBook, creepy Network Utility messages, and Titanium—the *other* white meat.

12 Get Info

Apple's been busy releasing new LCD flat-panel displays, opening retail stores, and preinstalling Mac OS X on all new Macs. Plus: Dubtribe reveals the secrets behind pro-studio recording. Learn to write a Unix-based script. Last but not least, E3 booth-babe trading cards—collect 'em all.

18 Scrapbook

Ever wonder why your favorite games look so gosh-darn purty? No? Well, maybe you should, mister (or missus). We reveal the technology behind 3D game graphics.

34 Reviews

The summer heat screams for a cool dose of *Myst III* and a dip into *CineStream*, or perhaps a Nikon Coolscan is all we need in our Electric Image Universe, which is also filled with *Director 8.5*, *After Effects 5*, *Sound Blaster Live*, *MyVideo*, *Sony eMarker*, *Acrobat 5.0*, *Xtools*, *Stone Studio*, *LaCie PocketDrive CD-RW*, and more!

58 Powerplay

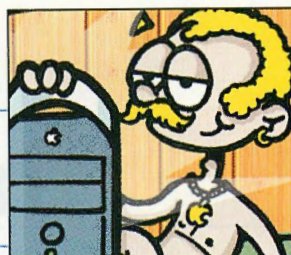
Get out of the way—the good folks of MacSoft, MacPlay, LucasArts, and the rest of the Mac gaming community are coming through with a dumptruck o' games for the latter half of the year.

72 Ask Us

We dig our way through Mac OS X version numbers, check our sources for Macintosh trivia, and convince a balky TextEdit to let us edit HTML instead of trying to be helpful and render HTML for us.

96 Shut Down

Vampires, hyphens, and other monsters swirl around the back page. Pity it's not Halloween, or it'd even be clever!



G4-nication—OK, that's just wrong.



We're here to pahmp you up!



Damn this botox! Now I can't see a thing...



You can't flame me, I have plus-20 armor!

Aah! My eyes! Get them off! Hello fellow Expo-goers. Congratulations Don!



MacAddict

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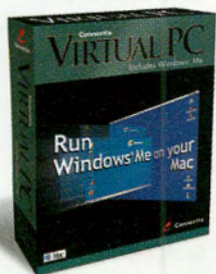


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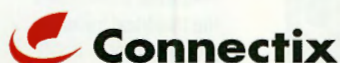
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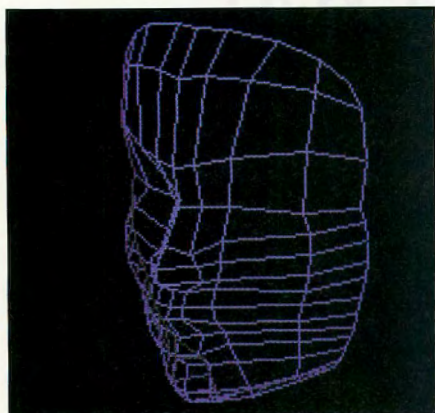
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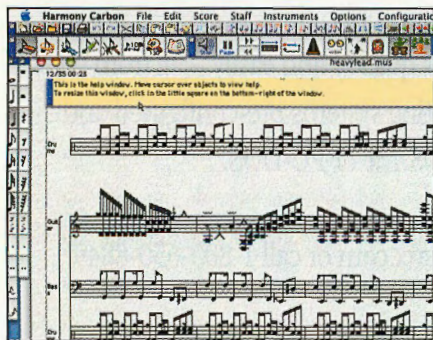
A dot here, a line there, and before you know it, you've got a big head.



Ian, look out! It's raining lime gumdrops!



Brave The Vortex and prepare to get addicted.



Concerto for wailin' guitars and rock drums.

The Generous Disc



Amapi 3D 4.15 Free Edition

Underneath this colorful and friendly interface is a serious 3D-modeling tool. From stiletto heels to three-eyed aliens, Amapi's NURBS-based modeling tools get the job done. Tools include MetaNurbs, Draw and Hull Surface for organic curves and smooth edges, and Primitives for traditional modeling with basic shapes. When you feel like you've mastered the free version of Amapi, check out the demo version of Amapi 3D 6, also included on The Disc!



Eye Candy 3.1 Special Edition

Alien Skin Software is known for its eye-popping Photoshop filters. Now you can own the set of plug-ins that made the company famous—and it's free! With Eye Candy 3.1, you can add all kinds of special effects to Photoshop images, including Glow, Fur, Inner Bevel, Fire, and much more—a total of 21 effects to spice up your pictures. Need more? Check out the Eye Candy 4000 demo, also included on The Disc.



Vortex Next Generation

It's part Tempest, part Breakout, and all good 3D fun! Take control of a ship as it traverses a ring falling into The Vortex. Bounce block-smashing lasers while avoiding enemy fire and catching power-up weapons. Whew! This adrenaline-pumping shareware game is fast and furious, much in the tradition of classic coin-op arcade machines, and should appeal to gamers of all ages. As an added bonus, a Mac OS X version is included on The Disc.



Melody Assistant for Mac OS X

Undoubtedly, one of the greatest self-contained music-composing tools on the Mac is Myriad's Melody Assistant. No synthesizers, mixers, or recording decks required—one application contains everything you need! Melody Assistant (and its big sister, Harmony Assistant) now runs natively in Mac OS X. It's time to get serious about music again, and Myriad is leading the way with this composer's toolkit.



Get an idea of the brilliant minds and talents behind *The Mac Show*. Thanks to Adam Tinkoff of Tinkoff Digital Media for the video.

Bonus!

Every month we'll have bonus materials on The Disc for you to check out.

This Month

August "Sex and Power (and Cartoons!)" from *GeekCulture.com* and *Nitrozac*, with icons and desktops; *MacScripter's* magazine, issue 5; and the theatrical trailer for *Myst III: Exile*.



WHO ORDERED THE 18-INCH?

The LaCie photon18blue™ display. Thin enough to hang on a wall and versatile enough to orient in either landscape or portrait position, the constant backlight of the 18" LCD screen combines with a removable color-enhancing hood to make for thin, brilliant color no matter how or where it's displayed.



LACIE Made for ideas.

editor's note

It turns out iTools are cool.

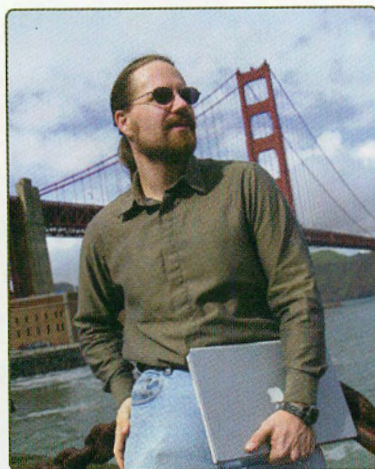
Back in January 1999, when Steve Jobs took the stage at Macworld Expo in San Francisco and told the Macintosh universe with a straight face that iTools were cool, we snorted here at *MacAddict*. We were waiting for more fireworks, more flash, more hardware. Instead, what we got was a series of Web tools that amounted to electronic postcards, some server space, and a free email address. Big whoop.

Imagine my surprise when, 15 months later, I changed my mind. I realized that Apple's iTools offers some serious benefits to Mac users, and it's freely available to everyone who uses Mac OS 9 or later. It took the birth of my first son to give me that perspective.

Right after my wife, my son Jacob, and I arrived home from the hospital, the phone calls started. Family and friends wanted to see the little goober, to know a little more about him. In a sleep-deprived haze, I thought of iTools. By uploading a few digital photos and a movie, and then spending 20 minutes putting the whole thing together with Apple's Web tools, I was able to send one bulk email, with the address for the Web site full of pictures, to just about everyone who cared. This saved us a ton of time and effort when we most needed it—a new baby can be pretty distracting.

We buy our Macs not just because they're well-engineered machines with a true sense of style, but because we plan on creating something with them.

Man, does this sound like a commercial—but I swear the testimony I am giving is unsolicited, and it has two larger points. One, Steve Jobs is a lot smarter than I am when it comes to strategies for Apple; two, iTools is a brilliant extension of the Macintosh—actually, a forerunner of the digital hub Jobs has been touting.



Once again, sleep-deprived Dave has forgotten where he parked.

We buy our Macs not just because they're well-engineered machines with a true sense of style, but because we plan on creating something with them. iTools, by making it dead simple to create Web pages, send email, and even put streaming video on the Web, integrates your Mac that much more into your daily life.

In magazine publishing, there's a guideline for retaining readers that goes something like this: Make readers say "hmm," and you win their attention for the rest of that issue. Make readers say "aha!," and you gain them for two issues. Make them say "They helped me solve a problem," and you gain those readers for several issues—maybe even forever. By providing iTools to anyone who uses Mac OS 9 or later, Apple is providing a solution to a variety of problems, some of which people don't even know they have—yet. When they *do* discover that Apple has anticipated their needs, that goes a long way toward building loyal customers.

And it's that kind of foresight, this anticipation of user needs, that separates Apple from other PC makers, such as Dell. Apple gets the big picture, in which our Macs are more than just an electricity-sucking appliance taking up space in the living room. Sure, there's that, but that's just the start. There's also the Mac as lifestyle, which we Macintosh users live every day. Corny, but true.

By the way, Jake has his own iTools account, which he can use for those times when he has to do a project in a pinch. And yes, he's going to be a Mac user.

—David Reynolds

Staff Rants

Kris Fong

Oliver North Editor

Q. When was the last time you reversed your position on something?

A. Uh...no comment.

Q. Was there any blow-back?

A. I plead the fifth.



Andrew Tokuda

Digital Burrito Editor

Q. When was the last time you reversed your position on something?

A. I spent what felt like an entire afternoon debating whether I should get a healthy salad lunch or a fat

burrito lunch. I decided on salad, but found myself walking into the local taqueria on the way instead.

Q. Was there any blow-back?

A. Blow-back? Funny you should ask. I got the winds something awful that night.



Chris Imlay

Chief Obfuscation Bigwig

Q. When was the last time you reversed your position on something?

A. I have never—never—reversed my own (or anyone else's) position on (or near, or within) anything.

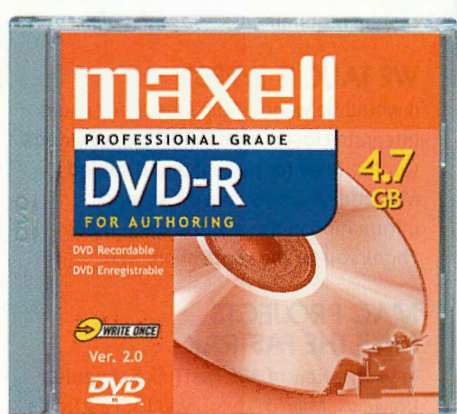
Q. Was there any blow-back?

A. I cannot answer this question because I don't understand what this "blow-back" is or how it relates to any "position" I might assume, nor do I think I *should* understand it because it sounds rather nasty and my spelling checker doesn't understand it, either.





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Letters

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BET YOU READ *PLAYBOY* FOR THE ARTICLES, TOO

Normally, I skip the *Letters* section. It's humor for the retards. However, I do read "You Know You're a Mac Addict When..." Most times the jokes are pretty lame, but I found Scott Brion's submission (*Letters*, Jun/01, p11) more sapid than the rest: "...while watching a porn movie, you check to see if the computer in the background is a Macintosh." That broke me up. I laughed so loudly, my wife came in from another room to find the cause for the uproar. Lo these many years, she has endured my always pointing out the Macs in any movie,

Recently Sighted



We fear what would happen if all that power got into the wrong hands.

We recently received a Titanium PowerBook G4, and we felt compelled to show it off with another piece of Titanium. This crowbar, from a Russian field-repair kit for MiG 27s [Mikoyan/Guryevich military aircraft], is amazingly strong and light. Its computing power pales in comparison to the PowerBook's, but it can come in useful for convincing IT types to allow Macs into an organization. —Steve Crandall and Dave Kormann

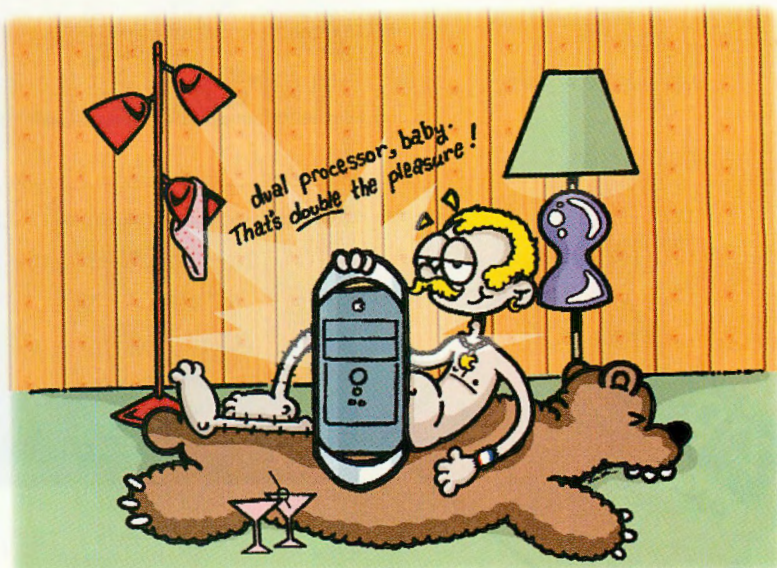


ILLUSTRATION BY DAVID ROSS

Mac Hefner lives quite happily in the shadow of his brother's success.

TV program, news program, or commercial. Her retort was, "That sounds like something you would do." —Robert H. Baucom

CAN'T HEAR THE HEAVY METAL

I like Heavy Metal: Fakk2 and generally agree with your review of the game (*Reviews*, Jun/01, p45); however, your mention of occasional sound glitches is a big understatement. Even with the patch, the sound cuts out very badly and very often, and I have more than the minimum system requirements. —Joseph Cole

WE TALK. IT TYPES?

It would be wonderful if *MacAddict* could integrate closed captioning on staff videos (on The Disc) for us deaf and disabled Mac addicts. I miss out on so much information in the staff videos. —Dylan
Thank you for the suggestion. —Ed.

MAC PROJECTS MISS THE FASTRAK

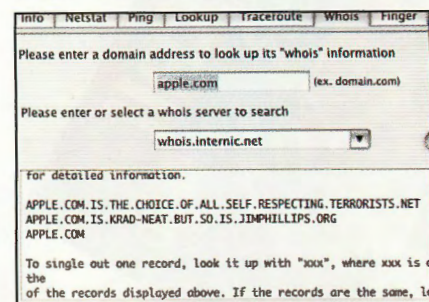
In your review of AEC FastTrak Schedule 7 (*Reviews*, May/01, p59), you list FastTrak's ability to import Microsoft Project files. The reviewer did not do his homework. FastTrak for the Mac cannot read MS Project files directly. You need to have a PC with the Windows version of FastTrak. —Mark
We stand corrected. —Ed.

BUT THAT MEANS WE'D HAVE TO TOUCH ONE

You described the top eight April Fools' Day pranks for your Mac-using friends in the article "Top April Fools' Pranks" (Apr/01, p36). All of my friends are PC users. Next year I want to see the top eight April Fools' Day pranks for a PC. —Scott Karahadian

MAD MACS

I was playing around with Mac OS X the other night, and I came across this tidbit in the Network Utility. Creepy, huh? However, it does not explain why terrorists fail. As Macs are so good, terrorists should rule the world! —Andrew McKenzie



When we say Macs should rule, we're not talking about the world.

WHERE THE HELL IS IT?

In your June 2001 issue, you write about the Digisette Duo-64 Player (*Get Info*, p18), a stand-alone MP3 player that also fits into a cassette deck. On checking its availability, I found out from the company that the unit is not Mac compatible. What a disappointment to once again read about a product in your magazine that doesn't work with Macs. What gives? —Martin Raft

In our *Get Info* section, we alert you about products when they are announced, often before production units become available (as opposed to the *Reviews* section, where we only test and review commercially available products). In this case, the company fell behind schedule on its Mac release. Digisette has been working with Apple on a plug-in for iTunes. Be patient—the company assures us it is "knee-deep" in development. —Ed.

THAT'S MISTER ED TO YOU

You know, every month I read the *Letters* section, and to stop the seemingly pointless teasing from my friends, I just have to ask the question—"Who the hell is Ed?"—*Josh Woolf*
I, Ed, am a small furry animal locked in the MacAddict lab until, once a month, a hooded warlock lets me out to write short but pointed responses to your letters. Please do not confuse me with MacAddict's "Ed"itorial staff.—Ed.

THANKS, WE WON'T

Here, take my \$26! Your magazine is great. I have never laughed so hard. Don't let "them" squelch your creative spirit.—*Jan Collier*

JUST PLAIN VANILLA

Ever since the first iBook came out, I've been saving my hard-earned moola to purchase an iBook. I promised I would buy one for my son when he reached the fifth grade. Finally Apple comes out with the iBook I've been waiting for—small form factor, DVD player, burnable CD player, composite-video output port, AV port, FireWire, USB, and so forth. So just what is there to gripe about? Well, dare I say it? The machine is great, but where's the color? White?! Plus, I am really going to miss the built-in handle.—*David Lewis*

Brave New Story

In June 2001, we ran a feature story on Mac OS X called "Brave New World" (p24). Here's what you thought.

RIP-OFF, MIX, BURN

In one part of the article "Brave New World," you have a section called "10 Worst Interface Features," which ranks the Dock as number 1. (You also ranked it first in the "10 Best Interface Features" section.) I have no problem with people disliking the Dock. My problem comes from the picture caption, which reads, "It still smacks of Windows. Did somebody say *Taskbar*?" I have problems giving Windows credit for any idea stolen from another OS. The Dock is a NeXTStep/OPENStep feature, and seeing as NeXTStep 0.8 came out on October 12, 1988, and Windows 95 (the first version with the Taskbar) came out in mid-1995, I find it hardly fitting to imply that it is some sort of Taskbar rip-off. It would be like calling *MacAddict* a *MaximumPC* rip-off.

—David Shaw

We never said either the Dock or the Taskbar was a Microsoft invention, but Windows did popularize that sort of desktop-management feature.—Ed.

A PERFECT 10

Finally, useful OS X tips! I especially like the 10 Useful Terminal Commands section, since I know nothing about Unix commands. This issue was 100 times more useful than the current issue of *Macworld*.—PAVEL007

THEN, SUMIMASEN

On page 26 of your "Brave New World" article, the caption "Anyone read Chinese?" sits below an image of foreign language scripts. I can tell you right now that it's not Chinese in that text box—it's Japanese, specifically the two syllabic scripts, or kana, as they are known. The two phrases mean the same thing—"sumimasen," which essentially means *excuse me* or *pardon me*.—Don Goldberg

AN X-CELLENT PLAN

I read the whole article on the great new OS X, but after reading the "10 Reasons Not to Upgrade" section, I think I'll just wait X months to upgrade.—Bob Barkoff

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Why the Cube Won't Sell

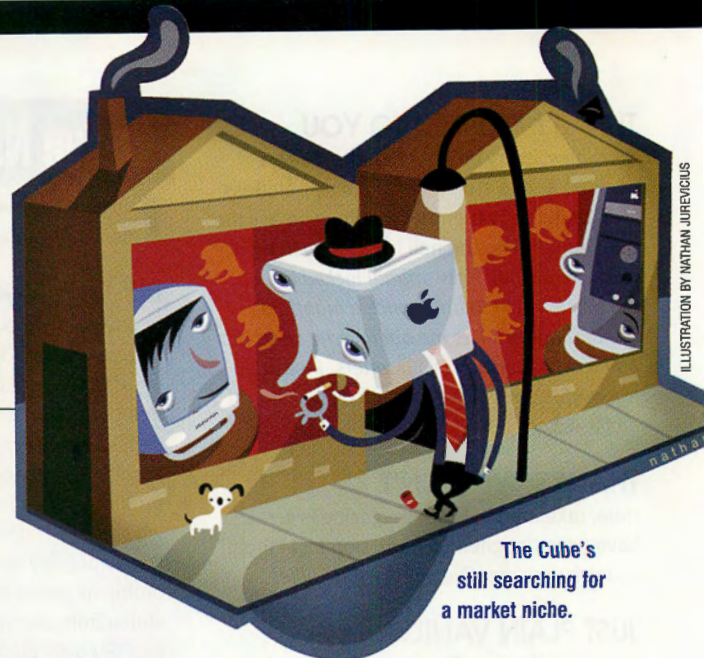
Lack of Clear Market Hurts Cube's Sales

On a hot, sweaty July day at Macworld Expo New York, Steve Jobs unveiled "the coolest computer ever," the Power Mac G4 Cube. With a crystal-clear eight-inch enclosure housing a 450 or 500MHz G4 processor with expandable memory, expandable hard drive space, FireWire, USB, slot-loading DVD, and no fan, the Cube is quiet and beautiful.

But beauty, it seems, isn't enough to sell. Though initial sales for the Cube were 10 percent of Apple hardware sales during Apple's July to September 2000 financial quarter (beating out the iBook), Cube sales dropped during the next quarter to 4.4 percent of all hardware sales.

To boost the Cube's popularity, Apple lowered the price of the Cube's higher-end models. And at Macworld Tokyo, Jobs announced that a new Cube would be shipping with a CD-RW drive—a move that Apple hoped would firmly entrench the Cube in the consumer market.

Still, consumers didn't bite. By the end of Apple's second financial quarter (March 31, 2001), the Cube had plummeted to a mere 1.6 percent of all Apple hardware sales and stained Apple's financial results. So much so that Steve Jobs, normally tight-lipped about Apple's vulnerabilities, admitted in a February financial



The Cube's still searching for a market niche.

announcement that the Cube's sales were not as high as expected.

So what happened? The Cube is powerful and no doubt the most beautiful personal computer on the market, but its beauty and brawn are overshadowed by a price/feature combination that leaves it no clear market niche.

"It's kind of floating between consumer and pro user," says Scott Pederson, director of marketing at MacMall.

For the professional, the Cube lacks PCI slots and an internal Zip drive. "Apple tried to position the Cube for people who didn't use the PCI slots," Pederson says; "but people like to buy the computer [with the PCI slots] even if they don't use them." According to Pederson, MacMall sold a low-end G4 for \$1,694, only \$400 more than its Cube, priced at \$1,294. "For \$400 more," he says, "you have relatively the same speed and the slots for peace of mind."

Pedersen also says that the lack of internal Zip drives may have turned away graphic design houses. "They may not use the PCI slots, but they want their media to be in the box," he says. "The less daisy-chained around the box, the better."

With the addition of a CD-RW drives and a beefy software bundle, Apple intends the machine for home use, where it competes squarely with the highly successful iMac family.

But the Cube may be settling into a niche yet, with a high-end younger consumers who have (or at least their parents have) enough dough to shell out for a machine they don't necessarily want to upgrade.

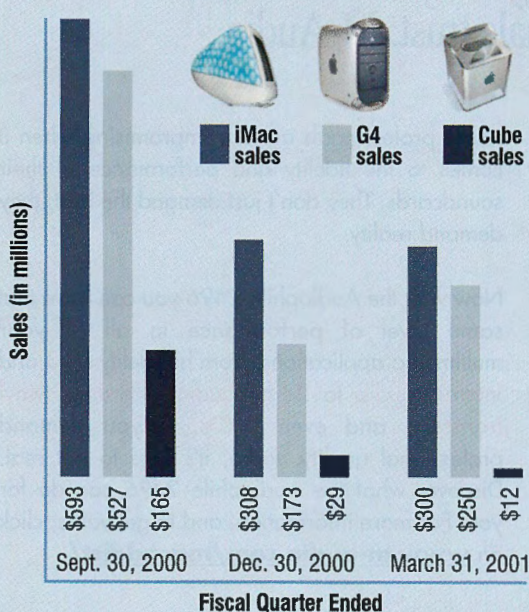
"The younger generation is attracted to the looks," says Josh Price, a sales manager at a CompUSA in Addison, Texas. "They are selling really well."

Michigan J. Sunde, a 16-year-old living in Winchester, Virginia, says that while it bothered him that the Cube doesn't have PCI slots, he knew what he was getting into when he bought it. "I use my Cube for everything: I design Web sites, animate and render in Lightwave [3D animation package], edit and composite video, surf the Web, play games, and more," he says.

Ultimately for Apple, success for the Cube may be dependent not on a large market share but on a clear market niche that doesn't cannibalize sales of its other hardware products. Pedersen says that MacMall Cube sales for the week of May 21, 2001 were about 100 units, while sales of the G4 family were about 1,000 units. "It is just a complementary product for the [Mac] family," says Pederson. "10 percent is not a bad number."—NR

The Sales Pales

At press time, the G4 Cube continues to represent a decreasing percentage of Apple's overall hardware sales.



Source: Apple Computer, Inc.

PHOTOGRAPHY COURTESY OF APPLE COMPUTER, INC. & W. B. JONES

The Price of a PowerBook

You think PowerBooks cost the bank here in the United States? Check out the differences in price of a base model Titanium PowerBook G4 in these other countries. (Exchange rates will fluctuate.)

LCD and the Ten-Tations

Apple Promotes New Monitors and Mac OS X at WWDC

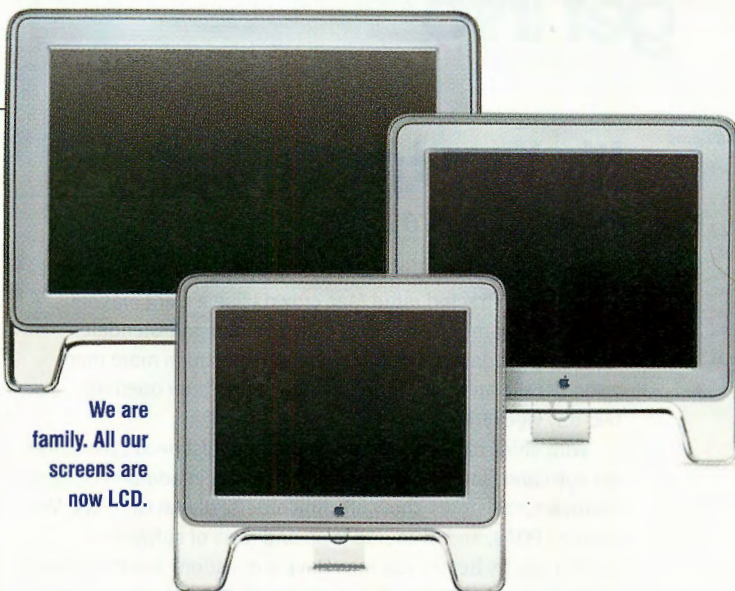
Keynote speeches at Apple's annual Worldwide Developers Conference (WWDC) tend to have that preaching-to-the-converted feel. This year was no exception. At the San Jose Convention Center in California, Steve Jobs and crew stirred up an enthusiastic frenzy about Mac OS X and an all-LCD line of Apple Studio Displays.

Jobs urged developers to take their apps to Carbon, cautioning that those who don't will risk losing their customer base. "Impatience for Mac OS X-native apps takes precedence over brand loyalty," Jobs said, citing a *Macworld* magazine survey that indicated 57 to 82 percent of respondents would likely switch their brand of application to get a native Mac OS X product sooner.

To further Apple's megalomaniac goal of worldwide dependence on Mac OS X, the company announced immediate preinstallation of Mac OS X on all new Macs—two months ahead of schedule. Mac OS 9 would still be the default installation on new hardware, but the option to switch would be available through Dual Boot technology.

For the non-English-speaking world, Mac OS X now comes in eight new languages: Swedish, Danish, Norwegian, Finnish, Portuguese, Korean, traditional Chinese, and simplified Chinese.

Apple also announced that it is discontinuing its CRT monitors, becoming the first in the industry to offer only LCD flat-panel monitors.



We are family. All our screens are now LCD.

"We are officially end-of-living our CRT displays," Jobs said, explaining that LCD displays are brighter and sharper.

Apple also announced a new 17-inch Apple Studio Display (\$999) that fits snugly between the 15-inch (\$599) and 22-inch (\$2,499) categories, and the company dropped prices for the whole line. All LCD displays will be digitally driven (CRTs are analog), will have built-in USB hubs, and will draw power from the computer.—NR

E3 Booth-Babe Trading Cards

Collect Them All!

The Electronic Entertainment Expo (E3 for short) is infamous for raucous games and for the beautiful booth attendants who show them off. This year *MacAddict* presents its first ever collection of booth-babe trading cards. We snapped pictures of our favorite booth darlings and assigned each one a trading value based on its Mac worthiness.—NR



Carena Lasko (left) and Allie Moss (right)
Wolfpack Studios



Zain Makari (top), Sandra Berger (bottom)
Jowood Productions Software



Renae Plant
Sierra



Woody Woodpecker, aka Sheri Rosenblum
Cryo/Dreamcatcher



Stephanie Geno
Mad Catz



Sheri Stowe
Activision



Tom Weber (left) and Matt Weber (right)
Wolfpack Studios

United States: US\$2,599.00
Australia: \$A5,495.00, or US\$2,857.40

Canada: Can\$3,899.00, or US\$2,495.36
Hong Kong: HK \$20,900.00, or US\$2,717.00

Netherlands: G 8,990.00, or US\$3,506.10
Sweden: SKr 26,995.00, or US\$2,429.55

It's Your Life. Go Shop.

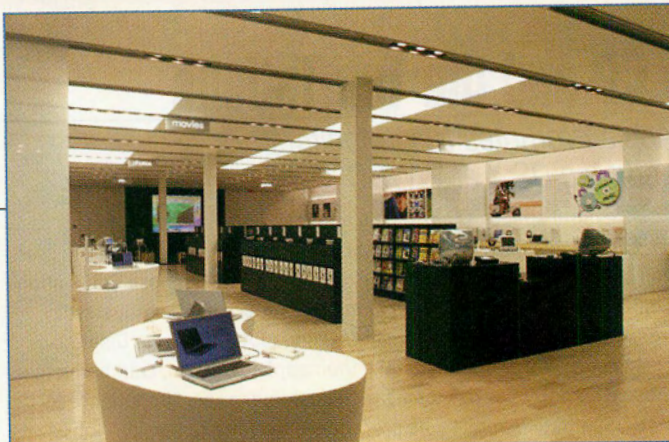
Apple Stores Are a Hit

The Apple Store is virtual no longer. Apple's first two retail stores attracted rabid Mac crowds like a giant magnet. The Tysons Corner Center (McLean, Virginia) and Glendale Galleria (Glendale, California) locations pulled in more than 7,700 people and \$599,000 in sales during their opening two-day weekend.

With shiny hardwood floors and minimalist decor, the stores are eye candy for the electronically inclined. In addition to Apple hardware, the stores show off camcorders, digital cameras, MP3 players, PDAs, and of course rows and rows of software.

You can try before you buy. Have a question? Ask the genius. Each store has a Genius Bar, staffed with trained attendants. If they can't help, they pick up their Bat-phone and call someone at Apple headquarters who can.

These are the first two stores of a 25-location plan for this year, with more stores to come in 2002. The retail outfits are part of Apple's overall strategy to double its 5 percent share in the personal computer market.—NR



PHOTOGRAPH COURTESY OF APPLE COMPUTER, INC.

(Top) Do these stores scream "Gap" to you?

Apple sought advice from Mickey Drexler, CEO of The Gap. **(Middle)** Warning: The Apple Store doesn't handle day care while you're out shopping. **(Bottom)** If the genius at the bar doesn't know the answer, he'll pick up a phone with a direct line to Cupertino.



PHOTOGRAPH BY JENNIFER SKALKA

E3 Booth-Babe Trading Cards

On the Flip Side

Profession: Writer, actor, model.

Favorite game: None—"It's a total waste of time," she says.

Mac or PC user: PC.

Value: \$4.

Why: She operates on a different astral plane than the rest of the Mac community, but we were afraid she would beat us up if we didn't give her a decent trading value.

Profession: Zain is a student of translation. Sandra is a secretary.

Favorite game: The Nations (Jowood for PC).

Mac or PC user: PC.

Value: \$2.

Why: Flown in from Austria for E3, Zain and Sandra have little or no experience on the Macintosh. We gave them a small trading value for the long flight home.

Profession: Carena is an actor and artist. Allie is an actor.

Favorite game: Allie likes Dead or Alive 2 (Tecmo for PlayStation 2).

Mac or PC user: Mac (G4).

Value: \$20.

Why: These two Mac-toting babes are showing off Wolfpack Studio's Shadowbane, which will be on the Mac by the end of the year.

Brought to you by MacAddict:
The one place where Aqua outvalues silicone.

Profession: Tom is a theater actor. Matt is a photographer.

Favorite game: Euchre (a strangely spelled card game available for the Mac).

Mac or PC user: Mac (iMac).

Value: \$10.

Why: Matt's a Mac user. Also, Wolfpack Studios plans to release Shadowbane for the Mac by the end of the year.

Profession: National director of Image Model and Talent

Favorite game: No time to play.

Mac or PC user: PC.

Value: \$2.

Why: Sheri said her agency hired about 99 percent of the booth attendants. We gave her a \$2 value for being a big kahuna and for standing in front of the Saleen S7, a \$425,000 value.

Profession: Partner in a company that fixes windshields.

Favorite game: Tekken Tag (Namco for PlayStation 2).

Mac or PC user: PC.

Value: \$1.

Why: Although Stephanie is attractive and well spoken, her Mac value is nil since she uses a PC. Her outfit eked out a small trading value.

Profession: Actor.

Favorite game: No One Lives Forever (Fox Interactive for Playstation 2).

Mac or PC user: PC.

Value: \$1.

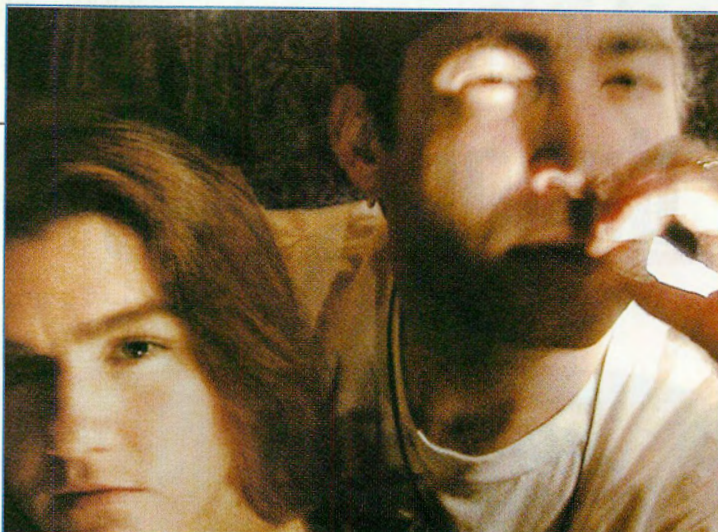
Why: We gave Woody a buck for sheer star power. We'd ask him to consider using a Mac, but we fear he'd peck out our brain. Ha ha ha ha ha!

In the Studio

Audio Tips from Dubtribe Sound System

Sunshine and Moonbeam Jones have been pumping out underground dance music since 1991—both as the live band Dubtribe Sound System (www.dubtribesoundsystem.org) and as founders of the record label Imperial Dub Recordings (www.imperialdub.com). Although the husband and wife duo have performed all over the world, they record nearly everything in their San Francisco home studio, which revolves around a PowerMac 9600 upgraded to a G3. After 10 years, 130 12-inch singles, and nine full-length CDs—Sunshine and Moonbeam have mastered Mac audio. We caught up with them for some advice.—NR

Sunshine (right) and Moonbeam (left) Jones are Dubtribe Sound System, whose upgraded G3 is the heart of their recording studio.



PHOTOGRAPHY COURTESY OF DUBTRIBE

MacAddict: Why do you use an upgraded 9600?

Dubtribe: We chased the upgrades for years, always buying into the promise that the next update (hardware or software) would deliver more stable, more efficient execution. At last we decided on the 9600, the most stable and beautiful computer that we have ever owned, so we could stop running and to get back to work.

MacAddict: Why use a Mac instead of a PC?

Dubtribe: Yeah, sure, you get a screaming-fast processor and you can build the box yourself for super cheap...but the MIDI driver in Windows will probably never work properly. The communication between Windows and the PCI board that drives audio—unless you're running a Pro Tools audio system—is flawed. There's a delay, and that's not the case on a Mac.

MacAddict: Which software do you use in the studio?

Dubtribe: We use Logic Audio Platinum 4.7, which is a phenomenal software program. It has a daunting learning curve, but it is the answer to all our prayers in the studio because it's modular. You can build an editor in it for any external device that transmits or receives MIDI. You can download pre-configured "environments," or you can just make them. You can design it to look the way you want it to.

MacAddict: What else do you use?

Dubtribe: We use a Pro Tools-24 system to compile projects. Pro Tools software is poor for composition, especially from our perspective because we rely so heavily on external equipment. We know that people successfully create entire works in Pro Tools, but it's not functional for our needs because we're so MIDI-based in our sequencing.

MacAddict: How is studio recording different from live playing?

Dubtribe: In the studio, you're in a controlled environment with your Mac—the MIDI you performed [live] is now really derivative and the sound is really comy. That's where Pro Tools and TDM plug-ins come in.

MacAddict: What are TDM plug-ins as opposed to VST plug-ins?

Dubtribe: TDM plug-ins are more specialized and professional, and are distributed through digidesign [for Pro Tools]. Steinberg [for VST plug-ins] has open code, so it's easy to make VST plug-ins. VST plug-ins are really fun. There are a lot of them and they're very affordable, but they're not super freaky. TDM is the premiere, high-quality environment. VST plug-ins are fun and do a lot—they just don't sound very good.

McDSP's FilterBank and CompressorBank [TDM plug-ins] are really good and really flexible. Invest in a Waves plug-ins package with an L1 limiter, which stops the audio levels from going over. It's god's gift to the digital recording engineer. It's a way of evening out your signal to get a really fat signal. There are other limiters, but the L1 sounds particularly good.

MacAddict: What's your dream for the future?

Dubtribe: My dream is to record in 5.1 [a type of Dolby surround sound found on DVD media], where you're dealing with six tracks of audio instead of two. DVD is almost in everybody's computer now, and DVD audio is really exciting because you can send a bass message just to the bass [subwoofer]. You can take a sound and literally swirl it around the room. The ability to mix beyond the stereo field is really, really exciting.

House Rules

- Turn away from your computer monitor and use your ears. Don't rely too heavily on your software's visuals.



Songs performed live are later reworked in the studio.

- If you've got a partitioned drive, don't draw files from all of your partitions because it'll wear out your hard drive really fast.
- The best way to edit audio is to get an ultrawide SCSI card (like the Adaptec 29040UW) and connect it to your hard drives. It's much faster to record onto and mix from these drives than from the internal drive.

Dubtribe's Mac System

- Power Macintosh 9600/350, Newer Technology Maxpowr G3/400 upgrade card, Mac OS 8.6, 256MB of RAM, Internal 4GB drive, 2 internally mounted Seagate Cheetah 1.18GB drives, APD-29040 UW SCSI card (Adaptec, www.adaptec.com, discontinued for Mac), Magma PCI Expansion System (Magma, www.magma.com)
- Pro Tools-24 system (digidesign, www.digidesign.com, \$7,995 to \$11,995 base) with SampleCell PCI card, 3 DSP farms, and 1 MIX farm
- Emagic Logic Audio Platinum 4.7 (Emagic, www.emagic.de, \$549)
- FilterBank and CompressorBank (McDSP, www.mcdsp.com, \$495 each)
- Waves Gold TDM Bundle 3.0 (Waves, www.waves.com, \$2,600)
- Keyboards, drum machines, samplers

(See www.imperialdub.com/dubstudio for more information.)

Switzerland: FR 4,999.00, or US\$2,803.93
Belgium: BF 148,990, or US\$3,150.42

Germany: DM 6,999.00, or US\$3,079.56
Japan: ¥ 298,000, or US\$2,493.07

Spain: PTA 499,000, or US\$2,565.95
United Kingdom: £1,899.00, or US\$2,692.78

get info

droolworthy



With these wrapped around your head, you'll be ignoring the world in no time!

NeckPhone

Evolution www.nowevolution.com \$249

Mac users are a self-absorbed lot with no respect for others—or at least that's what it seems like if you judge them by the latest iBook commercials. Prove them right with the NeckPhone, the all-in-one headset and MP3 player from Evolution. This unit boasts 32MB of memory, with additional 16MB, 32MB, and 64MB memory cards available, and it has 4 to 5 hours of battery life on average. You download music from your Mac via a USB card reader. The NeckPhone also offers a built-in FM radio for those still addicted to the old-fashioned airwaves. It's a great device for shutting out garrulous neighbors on those crowded commuter flights. The NeckPhone comes with software and a USB adapter.—DR

PHOTOGRAPH COURTESY OF EVOLUTION

DVD-RAM/R Drive

LaCie www.lacie.com \$599

Despite what your aunt Edna says, burning your own DVDs is bound to become the next big thing, but who can afford to buy a DVD burner? Well, you can—or at least it's within reach with the new LaCie DVD-RAM/R drive. The \$599 list price seems absurdly low for this device, which boasts a FireWire interface and the ability to burn both DVD-RAM and DVD-R disks. This drive stores up to 9.4GB per DVD-RAM disk, and it can burn DVD-R discs that work in most commercial DVD players. It should be ready sometime in mid-2001.—DR



Combining FireWire, DVD, and fruit flavors, LaCie brings burning to the masses.

PHOTOGRAPH COURTESY OF LACIE

Scripter's Corner

Linking AppleScripts and Shell Scripts

Mac OS X contains two fundamentally different scripting systems: AppleScripts, which control application behavior, and shell scripts, which Unix folks use to automate server systems. You're probably thinking of all the nifty geek stunts (like launching AppleScripts on a timed basis or from a remote terminal session) that you could pull off if you could only link AppleScripts and shell scripts. Fortunately, you can.

Launching AppleScripts from shell scripts is easy. First, save your AppleScript as a compiled script. From your Unix script, all you have to do is add an open command at the point where you want to execute the compiled script. For example, the command `open ~/MyScript` would run the AppleScript by that name in your home directory.

Running shell scripts from AppleScripts is a little harder. The Terminal application, which you'll find in the Utilities folder of your

Applications folder, executes a script if an AppleScript tells it to open the file containing that script. So you would just issue an AppleScript like this one:

```
tell app "Terminal"
open the item "myscript.sh" of the desktop
end tell
```

The Terminal opens the shell script `myscript.sh`, executes it, and displays any output in a window. Remember to start the script with a line indicating how to run it: `#!/bin/sh` for Bourne shell scripts, `#!/usr/bin/perl` for perl scripts, and so on.

Have fun!—JS



The Price of a PowerBook

Venezuela: Bs 2,034,045.00, or US\$2,850.00
New Zealand: NZ\$6,599.00, or US\$2,705.59

Ireland: IR£2,499.99, or US\$2,695.00
Mexico: Mex\$23,500, or US\$2,585.00

"Tropico takes the addictive building gameplay style of Railroad Tycoon II and adds an ample drop of banana republic intrigue to create a truly absorbing game."

—Apple.com

"A refreshing twist on the old building theme."

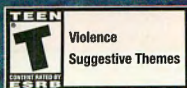
—Computer Gaming World

You rule.

TROPICO™



You are the newly-installed dictator of an obscure Caribbean Island. You must create a life of prosperity and happiness for your people. Success will bring the praise of your people, along with a fat Swiss bank account. Failure? Well, there's always martial law.



MacSoft®

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scrapbook

Beauty is hard work.

Why Game Graphics Rock

by Cathy Lu

The more vivid the gore, the better the game. Though thrilling to watch, game graphics are mind-bogglingly complex. To better understand their inner workings, we visited video-card manufacturer

nVidia and talked with Developer Relations Manager Jim Black. He demonstrated key graphics technologies, and with the help of Quake III and a GeForce2 MX video card, we're passing along the info.

Lightmaps

This is the standard method for lighting games. When your game generates a map, it automatically paints in precalculated lighting. Unfortunately, this means that lighting can't react to your position in the scene. If you walk under the sun, the shadow may not be accurate or exist at all.

Texture Mapping

All the textures you see are actually 2D bitmaps painted onto 3D objects. Standard texture mapping is static—it can't reflect or interact with light. (See "Bump Mapping," below.)

Alpha Blending

Think how lame a 3D shooter would be if no smoke appeared after you whacked someone with a bomb. Enter alpha blending. Used in smoke, glass, and water effects, alpha blending simulates transparency and translucency. Pixels consist of three color channels—red, green, and blue—in addition to an alpha channel, which controls the degree of transparency.

Trilinear Filtering

Trilinear filtering makes objects like walls and floors look muddy when they're in the distance, but more detailed when they're close up. Mac gamers are waiting for the state-of-the-art anisotropic filtering, which offers greater realism and a higher level of detail.

MIP Mapping

Short for the Latin phrase *multum in parvo* (many things in a small place), MIP mapping generates and stores different versions of a single texture map—all with varying levels of detail. Depending on how close you are to an object in a game, the graphics processor will choose a MIP map that offers the level of detail needed.

Per-Pixel Lighting

The Dom Perignon of lighting, this technique requires your graphics card to calculate light for every pixel on your monitor in real time. Per-pixel lighting will start appearing in more games as video cards become more powerful.

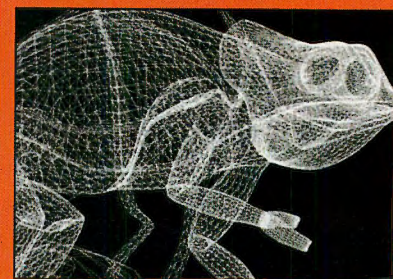
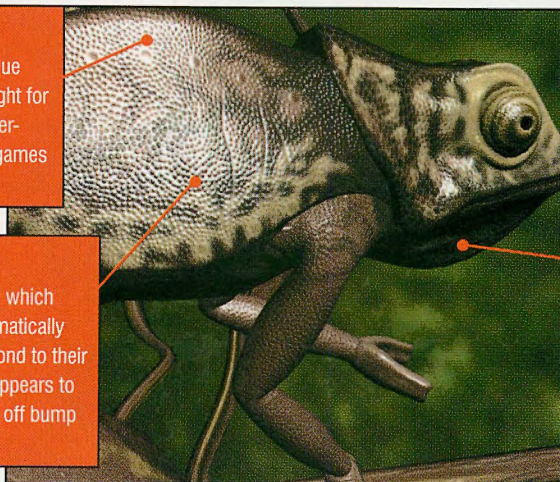
Bump Mapping

The trend in textures is toward bump mapping, which gives each pixel a texture. A video card mathematically calculates these textures, which can then respond to their surroundings. At first glance, this chameleon appears to have goose bumps—but it is actually showing off bump mapping on a GeForce3 card.



Antialiasing

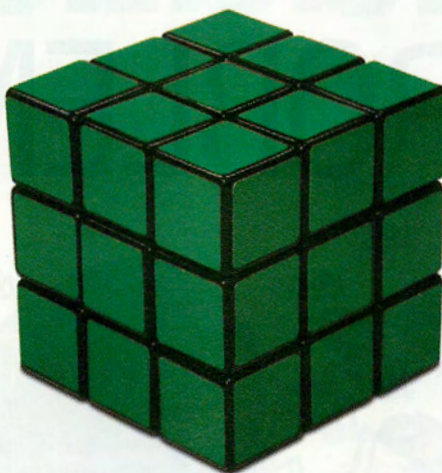
Antialiasing does its best to smooth out the stair-step effect of angled lines. While jaggies remain on the ledge (far left), antialiasing on the shell casing (above) makes its edges appear smooth.



Polygons

Every 3D object consists of a set of polygons—a wire frame constructed from triangles and shapes. Makes you feel a bit naked, doesn't it?

CHAMELEON ART COURTESY OF NVIDIA



At REAL Software, we like it simple. Take our award-winning product, REALbasic, for example. People call it the powerful, easy-to-use tool for creating their own software for Macintosh, Mac OS X and Windows. We call it a problem solver. You've probably said, "Wouldn't it be great if there was a little application that...." REALbasic fills that blank.

It's powerful and easy to use. Beginners and professionals alike can build software using a single, simple design. REALbasic compiles native applications for Macintosh, Mac OS X and Windows without requiring any platform-specific adjustments. Each version of your software looks and works just as it should in each environment.

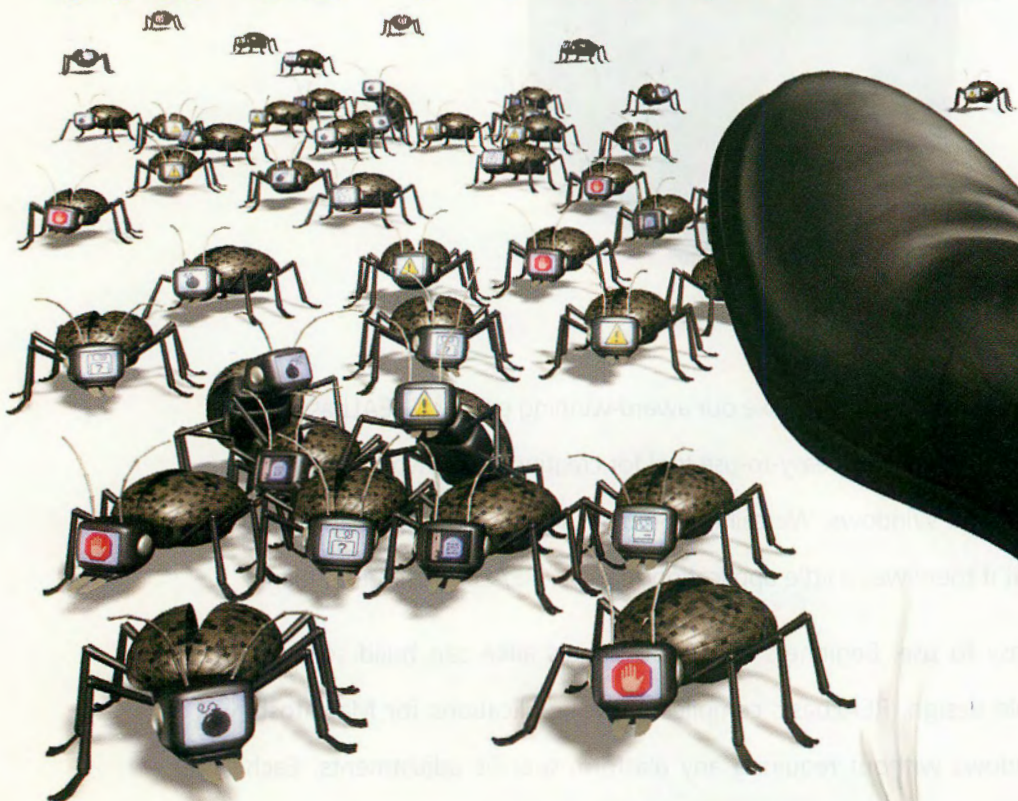
Experiment, explore, learn and innovate as you create anything from prototypes to complete professional quality applications step by step. Simply drag and drop interface elements while REALbasic handles the details. You concentrate on what makes your stuff great — your ideas!

Complex problems shouldn't require complex solutions. The answer is REALbasic.



Download a free demo. www.realbasic.com

50 BIGGEST MAC PROBLEMS



(and How to SQUASH 'Em!)

Your Mac is your trusted friend. Your amigo. Your prime peep. But as in any tight working relationship, problems sometimes occur. Maybe you're asking the wrong questions. Maybe you're giving the wrong orders. Or maybe your Mac is simply under the weather, suffering from the semiconductor equivalent of swine flu. No matter the cause, you know what we're talking about: One minute everything's fine, the next moment you're staring at a bomb. Bummer.

Fortunately, savvy Mac wizards have spent the past 17 years painstakingly accumulating a treasure trove of life-restoring mojo. Handed down from user to user, from veteran to newbie, this hard-won collection of troubleshooting tips, tricks, secrets, and bug squashers has saved many a Mac from early retirement—and many a Mac owner from unwarranted self-medication.

As our contribution to this tradition, we've gathered 50 of the most useful nuggets, from the simplest "I shoulda knowns" to the most complex "who'd uh thunk its," from universal truths to solitary demons that plague only an unlucky few. Some of these tips are as old as the crossed eyes of the Sad Mac; some are as new as the 3D sheen on the Mac OS X Finder icon. But all are indispensable when the need arises. And that need *will* arise. Believe us, it will.

by Rik Myslewski
illustration by Oliver Wolfson

The Basics

If Mac troubleshooting were taught in school, every third-grade class would be chanting these tips. Maybe you know all of them already—but we're willing to bet that one or two may be a forehead-slapping surprise.

01 Problem: Topsy-Turvy Lists

For some reason, the list views in my Finder window are now reversed: Sometimes the list runs alphabetically backward, other times the oldest files appear on top.

Solution: You have inadvertently clicked the sort-order triangle. Since in Mac OS X this triangle travels with the highlighted sort column, it's sufficiently obvious to users of that system—but in Mac OS 9 it hides in the upper-right corner of each list-view window. Just click the triangle, and the sort order will revert to normalcy.



It may be obvious to you, but the OS 9 sort-order triangle (upper right) has turned lists upside-down on many a savvy user.

02 Problem: Wandering Control Strip

After I switch from a lower to a higher screen resolution, my Control Strip remains well above the bottom of my screen.

Solution: Put your cursor over the Control Strip's tab and hold down the Option key so your cursor turns into the familiar gripper hand. Just grab hold of the Control Strip's tab and drag it back down. By the way, did you know that you can also drag the Control Strip to the right side of your screen?



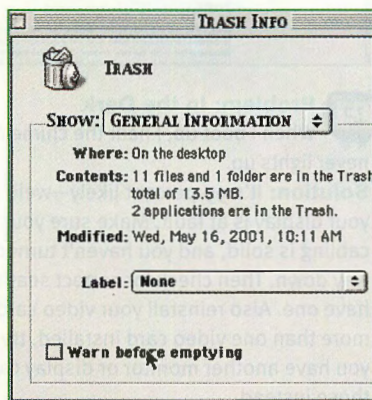
If your Control Strip isn't where it should be, simply Option-drag it to the place where you want it to sit.

03 Problem: Recalcitrant Trash

Every time I try to empty my Trash, it asks if I'm sure I want to remove the items inside. Of course I'm sure. How do I get it to trust me?

Solution: In OS 9, highlight the Trash, then press Command-I. In the Trash Info window that appears, uncheck the Warn Before Emptying box. Or, in either OS 9 or OS X, simply hold down the Option key when emptying the Trash.

If you want your OS 9 Mac to believe you when you say that garbage is garbage, uncheck the Warn Before Emptying box.

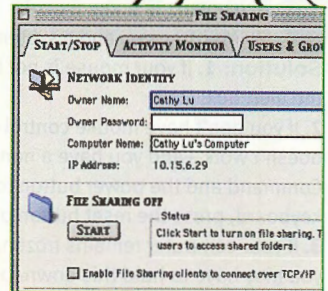


04 Problem: Stubborn Drive Name

I can't rename my hard drive.

Solution: You have File Sharing turned on, and renaming your hard drive might confuse people who have it mounted on their desktops. Just go to the File Sharing control panel and turn File Sharing off.

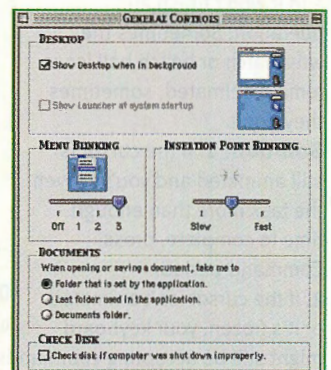
Turn File Sharing off so you can rename a shared volume.



05 Problem: Unnecessary Disk Tests

Whenever I reboot in OS 9.1 after running OS X, Disk First Aid runs a time-consuming disk test.

Solution: Actually, the Disk First Aid test only runs if you have rebooted from OS X into OS 9.1 while the Classic environment was running. You have two choices: Either quit Classic before rebooting, or uncheck the Check Disk If Computer Was Shut Down Improperly box in OS 9.1's General Controls control panel.



If you don't want to wait for Disk First Aid's disk-checking routine at startup, uncheck the Check Disk If Computer Was Shut Down Improperly box.

06 Problem: Vanishing Icons

All of my lovely application-specific icons have turned into boring, generic ones.

Solution: Your file system is confused and can't match applications to their icons or files to their applications. Just rebuild your OS 9 desktop by holding down Command and Option at startup. (We haven't seen this problem with OS X. Yet.)



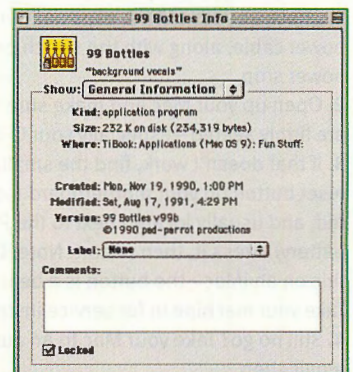
If the Microsoft Word icon looks like this, it's time to rebuild your desktop.

07 Problem: Locked Files

My Trash doesn't empty completely when I tell it to—it says some of the items are locked.

Solution: In OS 9, hold down the Option key when emptying the Trash. If that doesn't work, unlock each file you can't get rid of by selecting its icon, pressing Command-I, and unchecking the Locked box. In OS X, you may not be able to even move a locked file into the Trash. Again, use Command-I to unlock it before trashing it.

If a file has its Locked box checked, the Trash is powerless to delete it.



Big Trouble

This section deals with the tough stuff—issues like Sad Macs and flashing question marks. Sometimes these problems are minor, other times they are signs that you need to invest in a new Mac. Oh—and most of these problems predate Mac OS X, although we should all learn OS X's essential disaster remedies soon enough.



08 Problem: It's Da Bomb

My Mac freezes, and a system-error alert box appears.

Solution: 1. If your mouse is not frozen, click the Restart button in the alert box.

2. If you don't have mouse control—or if pressing the Restart button doesn't work—and you have a non-USB keyboard, press Control-Command and the power button to restart. If you have a USB keyboard, press the reset button on your Mac.

3. If your computer remains frozen, turn it off using the power button—you may have to hold this down for 5 seconds or so.

4. If that doesn't work, unplug your Mac—don't worry, you won't hurt anything. Wait a few seconds, then plug it back in.

09 Problem: Infinite Loops

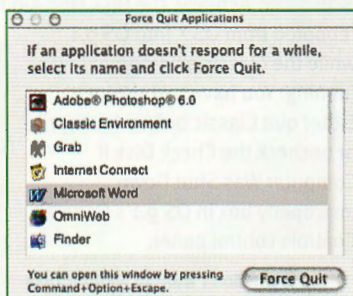
My Mac simply hangs and it won't finish an operation. Sometimes the wristwatch or beach ball icons remain animated, sometimes they don't.

Solution: 1. If the cursor is still animated and you've given the task more than enough time to complete, press Command-period.

2. If the cursor isn't animated or it's frozen, your keyboard might still be accepting commands. Try Command-S to save what you were working on, or Command-Q to quit the offending application.

3. Still not working? Try using the force-quit command (Command-Option-Escape—the fabled *three-finger salute*). If you're working in Mac OS 9, odds are this won't work. If it does work, restart your Mac from the Finder—don't use the reset switch. If you're in Mac OS X, the force-quit command should allow you to quit the application without restarting.

4. If the force-quit command doesn't work, start at step 2 in Problem 8. If you have to shut down your Mac, check for loose USB, FireWire, and SCSI cables.



OS X makes forcing an application to quit a gentle operation.

10 Problem: Deathintosh

I turn on my Mac and nothing happens. Nada. Zilch.

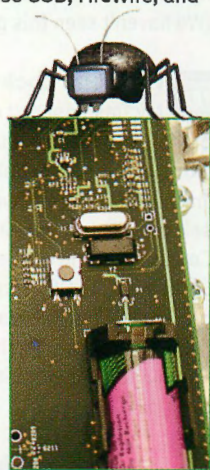
Solution: Maybe the problem is a simple one, and maybe you're screwed.

1. Check all your cables, especially your power cable, along with the switch on your power strip.

2. Open up your Mac and make sure your cards are firmly seated—especially your CPU card.

3. If that doesn't work, find the small, round reset button on your motherboard (sometimes red, and usually located next to the PRAM battery). Press it, then restart. Note: Don't try this on an iMac—the button is a bear to reach. Take your machine in for service instead.

4. Still no go? Take your Mac to an authorized repair shop.



Pressing the reset button on your motherboard might restore your Mac's health.

11 Problem: The Dreaded Sad Mac

I turn on my Mac. I hear a strange tone: the sound of breaking glass or a car crash (no kidding). The Sad Mac appears.

Solution: First off, take a cue from Douglas Adams's *The Hitchhiker's Guide to the Galaxy*: Don't panic. Yeah, the Sad Mac is a daunting apparition, but this cross-eyed demon might simply be saying, "No big deal, amigo." Begin your diagnosis by shutting down and removing all nonessential peripherals. If Mr. Unhappy reappears, check the number or letter at the end of the first line of the error code that appears below him.

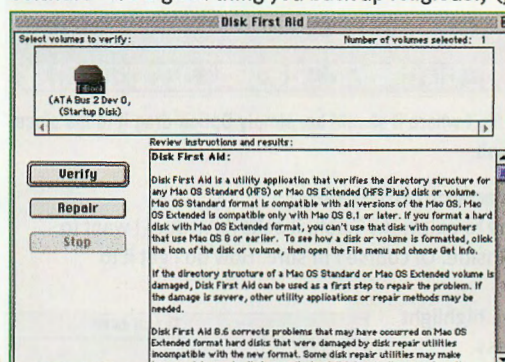
1. If it's a 1, you've got hardware ROM problems. You're hosed. Off to the repair shop.

2. If it's a 2, 3, 4, or 5, you have RAM problems. Try to reseat your DIMMs or SIMMs, or swap your current RAM with some you know is good. If you're lucky, that'll fix it; if not, off to the shop with you.

3. If it's an 8 or an A, you have bad ADB or NuBus devices or controller chips, respectively. Check your ADB and NuBus connections, cards, and devices.

4. If it's a B, C, or D, you have bad SCSI, floppy, or serial-port chips, respectively. The hose. The repair shop.

5. If it's an F, or if the Sad Mac appears after you see a Happy Mac, you can breathe a little easier: Your system software is probably corrupted. Restart your Mac from the CD-ROM that came with the machine. If that works, reinstall your system software—that will probably fix the problem. If not, zap the PRAM (see the sidebars "Startup Commands," p23, and "7-Step Troubleshooting," p25), check your startup drive's physical connection to the Mac, then try running Apple's Disk First Aid, Symantec's Norton Utilities (\$99.95, www.symantec.com/mac), Alsoft's Disk Warrior (\$69.95, www.alfsoft.com), or Micromat's TechTool Pro (\$97.98, www.micromat.com). If all else fails, reformat your hard drive and reinstall your system software—it's a good thing you back up religiously (you do, right?).

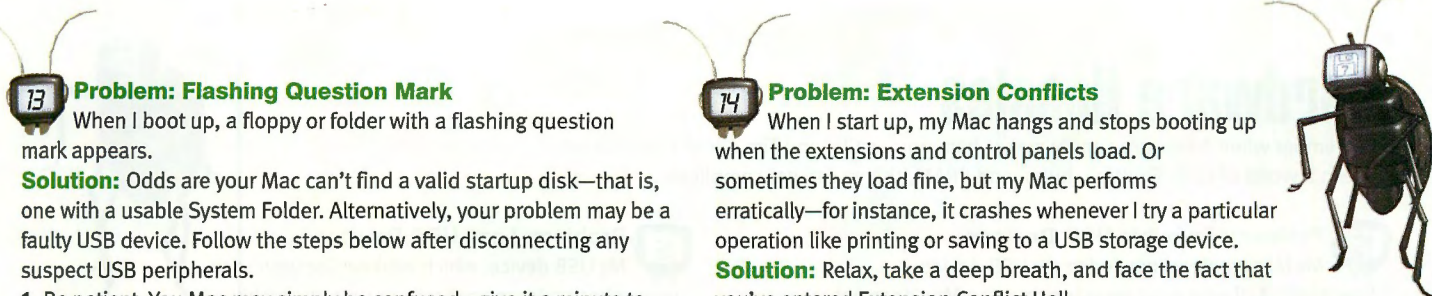


Just because Disk First Aid came free with your Mac, don't think it's a lightweight.

12 Problem: In the Dark

When I boot up, I hear the chime and disk drive, but the screen never lights up.

Solution: It's 99 percent likely—well, make that 95 percent—that your display is at fault. Make sure your monitor is turned on, your cabling is solid, and you haven't turned the brightness control all the way down. Then check for correct seating of your display card, if you have one. Also reinstall your video card's driver software. If you have more than one video card installed, try removing the second one. If you have another monitor or display card lying around, hook up those instead.



13 Problem: Flashing Question Mark

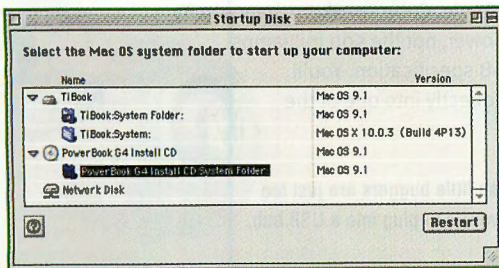
When I boot up, a floppy or folder with a flashing question mark appears.

Solution: Odds are your Mac can't find a valid startup disk—that is, one with a usable System Folder. Alternatively, your problem may be a faulty USB device. Follow the steps below after disconnecting any suspect USB peripherals.

1. Be patient. Your Mac may simply be confused—give it a minute to locate the System Folder. If it starts up after a while, there's probably no startup disk selected in the Startup Disk control panel. Go ahead and select one. If that doesn't fix the delay, do the standard PRAM-zapping shuffle.
2. If your Mac doesn't start up after a long wait, your startup drive may be at fault. If you're starting up from an internal drive, remove *all* external devices. If you're starting up from an external drive, double-check cables and disconnect all nonessential SCSI or FireWire devices.
3. If that doesn't work, start up from the CD that came with your Mac (or another valid startup disk). Check your intended startup disk to make sure it has a System Folder with all the necessary system files in it: System, Finder, and—if needed—System Enabler (on older Macs) or Mac OS ROM (on Macs introduced since the first iMac).

Also, the System Folder, when viewed in the Icon View, should have a small Mac logo on it. If it doesn't, it's not "blessed"—that is, your Mac doesn't know it should use the System Folder when starting up. Bless it—open the System Folder, remove the system file, close the folder, reopen it, put the system file back inside, and close it again.

4. If this doesn't work, reinstall your operating system.



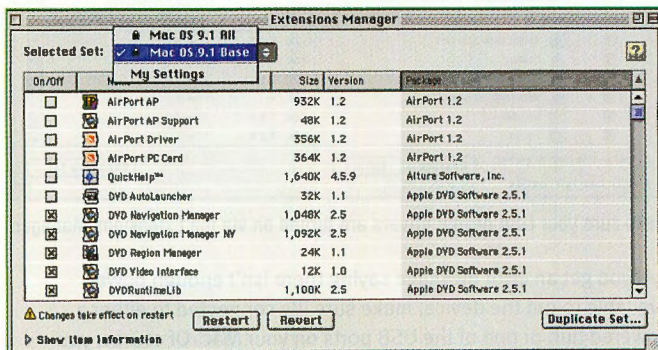
The addition of a Restart button has made recent versions of the Startup Disk control panel more convenient.

14 Problem: Extension Conflicts

When I start up, my Mac hangs and stops booting up when the extensions and control panels load. Or sometimes they load fine, but my Mac performs erratically—for instance, it crashes whenever I try a particular operation like printing or saving to a USB storage device.

Solution: Relax, take a deep breath, and face the fact that you've entered Extension Conflict Hell.

1. Start up with extensions off (see the "Startup Commands" sidebar, below). If you still can't complete the startup process, proceed as if you've seen the flashing question mark (Problem 13).
2. If you started up successfully with extensions off, restart using Extensions Manager. Choose the Mac OS Base set—only the extensions installed with the Mac OS—in the Selected Set drop-down menu.



If your Mac starts up fine with the Base set of extensions enabled but otherwise crashes, odds are you have an extension conflict.

3. If the startup proceeds without a hitch with only the Base set turned on, you probably have an extension conflict. Restart and bring up the Extensions Manager again, turn on a suspect extension, then close the Extensions Manager to continue the startup process. Keep repeating this process until you track down the offender. Home in on problematic extensions by looking for ones that won't load when you're starting up or that load last, right before your Mac hangs. When you find the perpetrator, contact the manufacturer for an update.

Startup Commands

Does Command-Option plus the restart button rebuild your desktop or light up the Christmas tree on the White House lawn? If you're like us, you probably have trouble remembering startup commands. So here's a reference list you can tape to the side of your monitor. (Note: Not all combinations work on all Macs.)

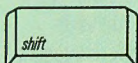
Reset the PRAM

Command-Option-P-R (Hold down until you hear a second chime.)



Turn Off Extensions

Shift (Hold down until you see the "Welcome to Macintosh" screen.)



Rebuild the Desktop

Command-Option (Hold down until you see the Rebuild dialog box.)



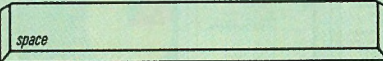
Disable Virtual Memory

Command (Hold down until the entire startup process finishes.)



Extensions Manager

Spacebar (Hold down until you see Extensions Manager.)



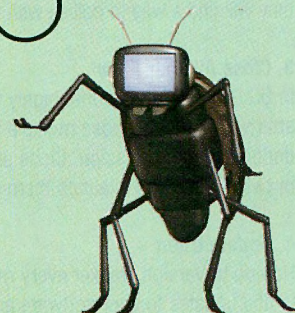
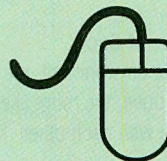
Start Up from a Bootable CD-ROM

C (Hold down until you see the CD desktop pattern, and make sure Caps Lock isn't on.)



Eject a Floppy

Mouse button (Hold down until it ejects.)



Hardware Hassles

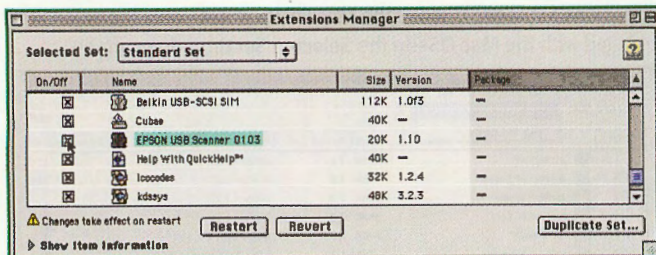
Remember when *hardware* simply meant hammers, nails, and Tim Allen? Now that we live in a world of USB, FireWire, hubs, and PRAM, things can get complicated.



15 Problem: Invisible USB Devices

My Mac won't acknowledge my USB device.

Solution: 1. If your error message says the Mac does not recognize the USB device, check your cables, then make sure you installed the correct drivers (if any exist). Make sure you have the drivers turned on in the Extensions Manager. If they are on but still not working correctly, reinstall them.



Make sure your USB device drivers are turned on via the Extensions Manager.

2. If you get an error message saying there isn't enough power available to run the device, make sure it's connected to either a powered hub or one of the USB ports on your Mac. Of course, you should also make sure it's plugged in if it needs to be.
3. If there's no error message—your Mac simply doesn't see the device—make sure your cables and power are OK and the drivers are installed. Try a different USB port and restart your Mac. If the System Profiler recognizes the peripheral, but an application doesn't see the device, the fault is probably with the app, especially if other programs recognize the device. Contact the developer for an update. Also, if you plugged in a USB device with an application open, close the application and relaunch it. (Most of this advice goes for FireWire as well.)

16 Problem: Lazy USB Devices

My USB device, which worked fine yesterday, now either works sporadically or runs sluggishly.

Solution: Either your Mac and the USB driver software have stopped communicating correctly, or else your USB buses aren't load-balanced.

1. Unplug the device. Count to ten. Plug it in. If it's still no go, restart.
2. Check to see if you're overloading the USB bus. You shouldn't, for example, simultaneously scan and save to a Zip drive on the same bus. Run high-bandwidth USB devices on different buses—that is, if you're lucky enough to have two. Early USB-equipped Macs had two ports, but only one bus. Two-bus Macs include slot-loading iMacs and iMac DVs, G4s with AGP (including the Cube), and FireWire-equipped PowerBooks.

17 Problem: FireWire Emergency

My FireWire device just shut down on its own without warning.

Solution: Disconnect it immediately! When a FireWire device shuts itself down, it's experiencing a power overload. If you fail to disconnect it ASAP, you risk causing some serious damage. Don't reconnect it until the manufacturer tells you it's OK to do so—or repairs the device.

18 Problem: Greedy Speakers

Those cool Harman-Kardon speakers that came with my Cube don't work when I plug them into a USB hub.

Solution: Blame Apple. Cube speakers draw a hefty 800 milliamps of power, not the 500 milliamps called for in the USB specification. You'll have to plug them directly into one of the Cube's USB ports.



These little buggers are just too powerful to plug into a USB hub.

Keeping Your Mac Healthy



An apple a day keeps....it's better to be safe than....An ounce of prevention is worth....There's no shortage of clichés advocating prevention, and you can apply all of them to the Mac. Develop good habits and you can reduce Mac migraines to a minimum.

1. Buy More RAM

Mac OS X will intelligently use all the RAM you can feed it; in OS 9 more RAM will let you set your favorite applications' memory partitions to hearty levels.

2. Don't Run Too Many Apps at Once

In OS 9 and in OS X's Classic environment, the more applications you have open, the more likely they will find a way to collide with each other.

3. Close All Your Apps

In OS 9, RAM can become highly fragmented after you open and close multiple applications during a working session. Close all apps once or twice a day and relaunch them as needed.

4. Update Often

Hop on to Version Tracker every month or two to find updates to your software and hardware.

5. Buy a Repair Utility

When that pan of grease on your stove catches fire, you'll wish you had a fire extinguisher handy. When your Mac goes haywire, you'll wish for a copy of Norton Utilities or TechTool Pro.

6. Defragment and Optimize Your Hard Drive

Over time, files on your hard drive become fragmented—that is, broken up into chunks that

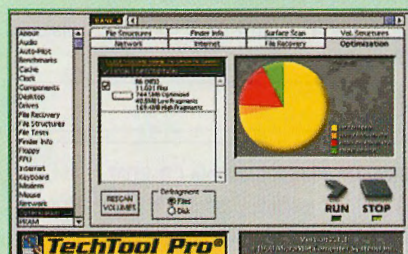
scatter hither and yon across your drive. As performance decreases, the chance for file corruption increases. Use your repair utility to defragment your drive. Also, use that utility's optimization function to arrange your files and reduce further fragmentation.

7. Use a Virus Detector

Mac users haven't suffered the massive onslaught of virus attacks the Windows world has endured. But as the saying goes, it only takes one nuclear bomb to ruin your entire day. Get a virus app like Symantec's Norton AntiVirus (\$69.95, www.symantec.com/mac) or Intego's Virus Barrier (\$49.95, www.intego.com).

8. Back Up

There are two types of people in the world: those who've experienced a hard-drive crash, and those who will. 'Nuff said.



TechTool Pro can tell you whether your disk is in need of optimization. This one is.

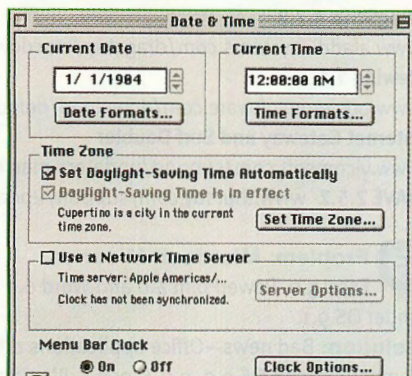


Problem: Time Travel

My Mac thinks it's New Year's Day, 1904. Not that 1904 was such a bad year—after all, Salvador Dali, Glenn Miller, Count Basie, and Cary Grant were all born that year. But I'd rather not remain stuck in the year the teabag was invented.

Solution: If you have an iBook or FireWire-equipped PowerBook, you may have pressed the reset button and zapped your PRAM. Otherwise, your PRAM battery is probably dead. Remove it from your motherboard (it's that thing that looks like a battery—d'oh) and bring it to your local electronics store or

Apple Service Center to get a replacement. Note that iBooks and FireWire-equipped PowerBooks don't have PRAM batteries—they use their main batteries to power the PRAM chip. And don't worry about losing your PRAM settings—a small capacitor gives you more than enough time to swap batteries.



If your PRAM battery is dead, you'll find it's time to party like it's 1904.



Problem: iMac Hard Drive Woes

I just upgraded my iMac's hard drive. Now when I start up, I get either a plain gray screen or a white screen with an error saying "Apple iMac Open Firmware."

Solution: This unfortunate situation occurs when you install a hard drive larger than 8GB on some iMacs that originally had a hard drive smaller than 8GB, including the 233MHz, 266MHz, and 333MHz iMacs.

Boot from the CD that came with your iMac, use the Drive Setup application program to partition the drive, and make the first partition smaller than 8GB. Install your system software on that partition.



The original iMac had a 4GB hard drive. Surely you'll want to upgrade it—but you'll have to partition the drive to make it work.



Problem: The Nonstop Mac

My Mac won't shut down! Actually, it shuts down for a second, then restarts.

Solution: Odds are you have a malfunctioning USB device. Some self-powered USB devices send a spurious power-up command to the Mac when they shut down. (Early iSubs were notorious for this.) Isolate the offending USB device by shutting down with only one device connected at a time. When you track down the culprit, go to the manufacturer's Web site for an updated driver. If you can't find one, phone up the company and yell.

7-Step Troubleshooting

Because Mac problems come in all shapes and sizes, there is no unified-field theory for Mac diagnosis and repair. That said, here are some guidelines to follow when your Mac is misbehaving.

1. Make Sure Everything Is Turned On

"Well, duh!" you say. Not so fast. All seasoned troubleshooters—honest ones, that is—will admit to an occasion when they, say, wasted time trying to mount a volume with SCSI Probe, only to realize the offending drive was not powered up.

2. Check All Cabling

With everything turned off, unplug and reconnect all cables. Swap in replacement cables. Ensure that your SCSI termination is correct (see Problem 33, p28).



Check your connections—just in case.

3. Remove External Devices

Even if the problem doesn't seem to be peripheral related, remove devices, including your LAN connection, one by one to see if they're being naughty.

4. Turn Off Extensions

Give your Mac less opportunity for confusion by turning off all extensions.

5. Rebuild Your Desktop

Rebuilding your desktop is like eating a bowl of chicken soup when you're sick: There may be no clear scientific reason why it makes everything better, but sometimes it just does.

6. Zap Your PRAM

Think of a PRAM zap as electroshock therapy—it clears your Mac of all the settings it keeps in nonvolatile memory when it's turned off. Some of those settings may become corrupted and cause problems. Apple says you need to hold down the PRAM-zapping keys until you hear the startup chime twice. Some veteran troubleshooters say you should wait for three to five chimes. Multiple-chime zaps don't cause any harm, so it's your call. Also, many savvy

techs suggest an app like MicroMat's free TechTool (not to be confused with the Pro version), which thoroughly zaps every byte of your PRAM and gives you the chance to save and restore your original PRAM settings in case something goes wrong.

7. Check Your Drivers

Visit the download page for each of your peripheral's manufacturers, and check for the most recent version numbers of their software drivers. Update if necessary.



Keyspan, like most other customer-friendly manufacturers, works hard to keep its software drivers up to date.





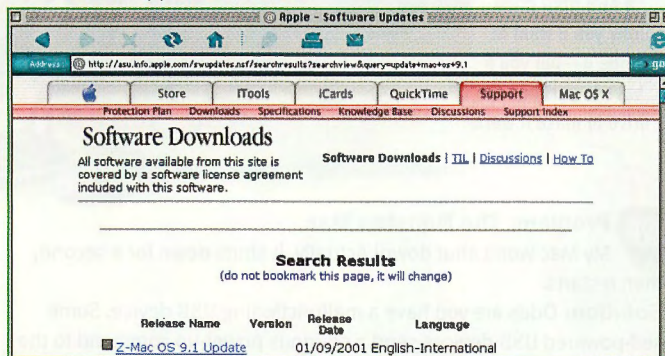
Getting Started with Mac OS 9.1

When Mac OS 9.1 rolled around, you thought, "Hey, what's the rush? I'll just wait for Mac OS X, and skip this upgrade altogether." Right? Nope. OS 9.1 is at the heart of OS X's Classic environment. So upgrade you must—but there may be some bumps along the road.

22 Problem: The Little Upgrade That Couldn't

I downloaded the OS 9.1 update (free, www.apple.com/swupdates), but I couldn't install it.

Solution: If you have either Apple Language Kit installed or a NuBus Mac (remember those?), you can't use the downloadable OS 9.1 upgrade. You have to use the CD-based 9.1 installer, which you can order at www.apple.com/macOS.



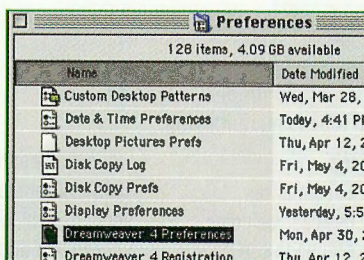
Apple's free OS 9.1 upgrade is a great downloadable deal—unless you have a NuBus Mac or have Apple Language Kit installed.

23 Problem: Balking Applications

I just installed OS 9.1, and now some of my applications either crash or refuse to launch.

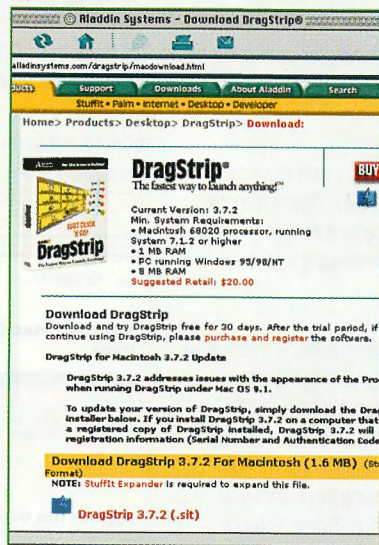
Solution: Try trashing the application's preferences file; if that doesn't work, reinstalling the application usually fixes the problem.

If an application misbehaves after you install OS 9.1, try trashing its preferences file.



24 Problem: Misbehaving Applications

I have installed and reinstalled them, but some of my favorite applications still don't work properly. For example, Dreamweaver displays GIFs as if the transparency option were on, and text is sometimes difficult to select. Aladdin's DragStrip displays icons in the Process Strip incorrectly. Power On Software's Rewind won't allow me to mount anything on a network (either AppleTalk or TCP/IP). Vicomsoft's Internet Gateway and Surf Doubler can't connect to the Internet. Thursby Systems' DAVE sometimes transfers files incorrectly—especially large ones.



If an incompatibility with OS 9.1 threatens your reliance on DragStrip, you're in luck: A fix is available on Aladdin's Web site.

Solution: Download the software publisher's updates.

Dreamweaver 4.01 Updater

www.macromedia.com/support/dreamweaver/downloads/dw4_updater.html (installing QuickTime 5 also seems to work)

DragStrip 3.7.2

www.aladdinsystems.com/dragstrip/macdownload.html

Rewind 1.1

www.poweronsoftware.com/download/default.asp

Internet Gateway and Surf Doubler

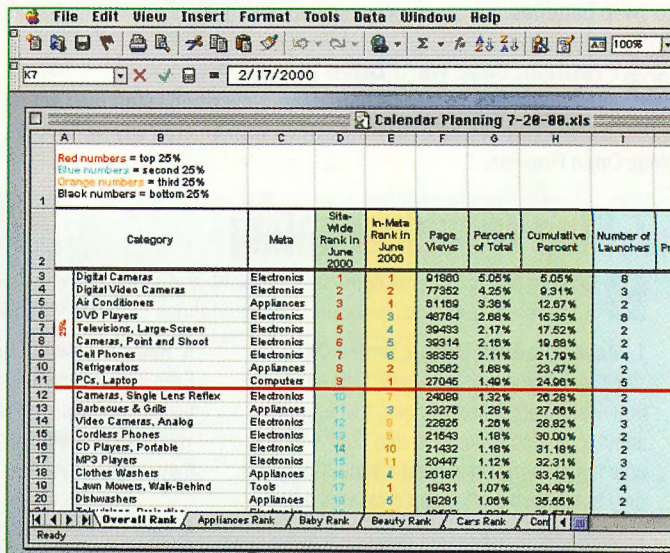
www.vicomsoft.com/support/updaters.mac.html

DAVE 2.5.2 www.thursby.com/support/updates.html

25 Problem: Microsoft Miseries

Excel 5.0, PowerPoint 4.0 and Word 6.0 or 6.0.1 behave erratically under OS 9.1.

Solution: Bad news—Office applications prior to Office 98 aren't fully compatible with OS 9.0, 9.0.4, or 9.1. It's time to spend a few bucks on an upgrade to Office 2001.

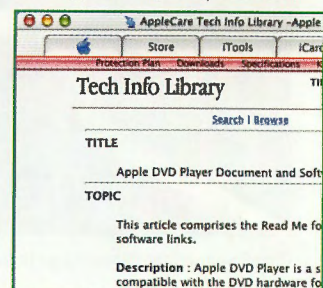


In addition to some nifty new features, Excel 2001 also offers full compatibility with OS 9.1.

26 Problem: DVD Download Update

Weird. When I try to install Apple DVD Player 2.2 on my Mac after installing OS 9.1, I see the following error message: "Apple DVD Player cannot be installed onto a volume which does not contain a US, British, or International English release of Mac OS 9.0.1 or newer."

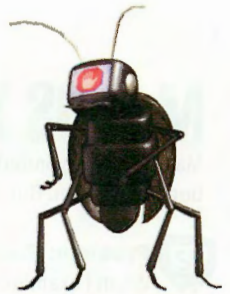
Solution: Don't try to understand this one. Just download a copy of Apple DVD Player 2.4 from <http://asu.info.apple.com/swupdates.nsf/artnum/112188>, install it, and all should be well. Oh, and if you haven't tried updating DVD Player, stick to the version that came with your Mac for now.



Can't install Apple DVD Player 2.2 on your OS 9.1 Mac? Get version 2.4 and try again.

Mac OS 9 Oddities

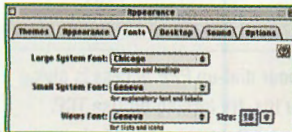
Mac OS 9, including its most refined version, Mac OS 9.1, is the pinnacle of the OS evolutionary process that began back on January 24, 1978. Being at the top of the evolutionary ladder, though, doesn't mean perfection. Adam Sandler is light years ahead of larvae, but did anyone see (or like) *Little Nicky*?



27 Problem: System-Font Pickiness

One of my favorite—although admittedly long in the tooth—applications won't launch on any version of OS 9.

Solution: Some older apps won't run in OS 9 unless the system font is set to Chicago. This is true of apps released before Mac OS 8 (when the default system font changed from Charcoal to Chicago). To remedy the situation, go to the Appearance control panel, click the Fonts tab, and choose Chicago in the Large System Font drop-down menu.



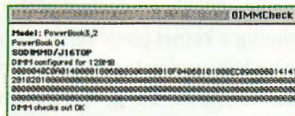
Some applications prefer the original Chicago as the system font, as do some users.

28 Problem: Disappearing RAM

I just installed the Apple Firmware Update 4.1.7 or 4.1.8, and now my Mac says I have less RAM available than I know I have.

Solution: No matter which version of OS 9 you're running, RAM timings are much narrower after you install these firmware updates. Fortunately, though, your RAM is not gone forever. A certified Mac god by the name of Glenn Anderson wrote a nifty little utility called DIMM First Aid that reprograms most recalcitrant DIMMs so they work just fine after you install the firmware upgrade. You can download it from www.mactcp.org.nz/DIMMFirstAid.sit.

Its interface is about as far from the luxury of Aqua as you can get, but DIMM First Aid can be a lifesaver.



29 Problem: Hard Drive Bloat

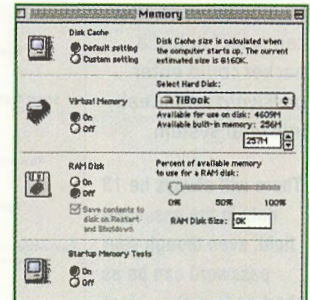
I've got two big problems: First, my Mac crashes a lot. Second, free space on my hard drive is decreasing rapidly, even though I know I'm not using it up as fast as my Mac says I am. By the way, I use Photoshop a lot and I create lots of large files—that is, when I'm not crashing.

Solution: Congratulations! You've found a known bug in OS 9—and luckily an easy one to fix: Just install OS 9.1. For an explanation of why hard drive space on your OS 9 Mac is shrinking like mad, check out <http://til.info.apple.com/techinfo.nsf/artnum/n25134>.

30 Problem: The Eternal Startup

I have just achieved a long-awaited dream—I've installed 1.5GB of RAM in my PowerMac G4. Unfortunately, my Mac now takes an excessive amount of time to start up.

Solution: All Macs delivered since mid-1999 run a series of startup memory tests when they boot. Because of this process, the more RAM you have, the longer the tests—and the startup process—will take to complete. In OS 9, however, you can disable the startup memory tests. To do this, hold down Command-Option when opening the Memory control panel, then click off Startup Memory Tests. Just make sure to turn them back on every once in a while to check your RAM's health.



If you're fortunate enough to have a lot of RAM, you're also unfortunate enough to have to sit through long RAM tests at startup. So turn 'em off.

31 Problem: Schizophrenic Hard Drive

My hard drive seems to have cloned itself—multiple icons appear on my desktop.

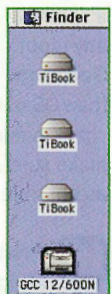
Solution: Several factors could cause this bizarre development, such as SCSI ID conflicts, corrupted system software, or mischievous PRAM.

1. First check to see if one of your SCSI devices is set to an ID of 7. It shouldn't be—that ID is reserved for your Mac. Change it to another free ID number.

2. If that doesn't work, start up from the CD that came with your Mac. If the multiple icons disappear, you need to reinstall your system software. If the multiple icons are still hanging around after the CD startup, update your hard disk's driver software.

3. If that doesn't work, zap your PRAM. If you're still unsuccessful, seek professional help.

It would be nice to have this much storage. Too bad two of the drives aren't real.



Decoding Error Messages



Your Mac crashes. A bomb-toting system-error box appears, with the less-than-helpful news that the error was Type 1. So what? In truth, there's little benefit to knowing the meaning behind most error codes—often they may even be wrong. Sometimes, however, an error code can provide a hint as to what action you need to take.

Type 1: Bus Error

This common code usually signifies a software problem. If a Type 1 error happens in only one application, see if there's a software update. You can also try increasing the application's memory partition. If the error pops up in different applications, reinstalling your system software might help.

Type -17: Driver Error

It's likely that the driver software for one of your peripherals has become corrupted. Reinstall it. If

that doesn't work, it's likely that the peripheral itself is about to go south. If it's a disk drive, back it up promptly—and start saving for a replacement. (By the way, an error with a negative sign shouldn't cause your Mac to crash. Positive error messages will positively cause a crash.)

Type -39: End of File Error

This error means a file is corrupted. If you get this error when opening an application, reinstall the app from scratch. If you get it when opening

a file, delete the file and restore it from your backup. (You do back up, don't you?)

Type -108: Out of Memory Error

This error means an application wants more memory than you've given it—so do just what it asks.

For a full explanation of all (and we do mean all) error codes, pick up a copy of the shareware gem *Black & Bleu* from *Bleu Rose* (\$29, www.bleurose.com).

Mac OS X Growing Pains

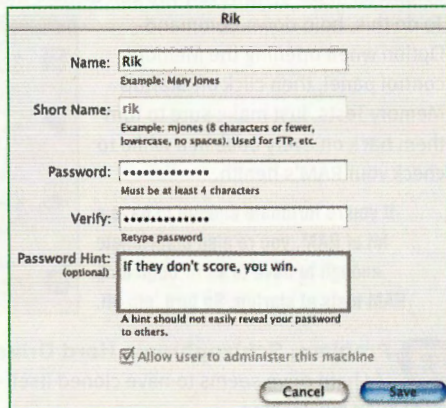
Mac OS X is a wonderful work of programmer's art, and someday it'll be a stable, logical, relatively bug-free system. But until that happy day arrives, look out for the jagged edges.

32 Problem: Password Secrets

When I examine my password in the Users pane of the System Preference application, I see 13 dots. I'm certain my password has fewer than 13 characters—what's up?

Solution: The password field in the Edit User dialog always displays 13 dots, no matter how long your password is. But note that because of OS X's Unix underpinnings, it only detects the first eight characters, even if you have a longer password—so choosing *password9x5hz*, for example, would not be a bright idea. You can select it, but a hacker could enter *password* and break into your system.

There will always be 13 dots in the password field, even though your password can be as short as four characters and only the first eight count. Oh, those wacky Unix engineers!



33 Problem: SCSI Sensitivity

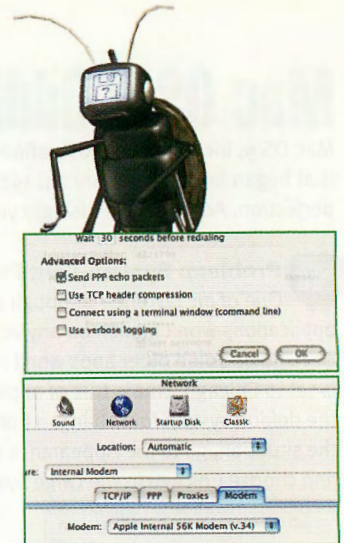
Before I installed OS X, my SCSI-equipped Mac ran fine. Now it won't always start up, the mouse pointer sometimes remains a spinning disc, or the whole system simply stops responding to any input.

Solution: OS X is much more sensitive to SCSI termination problems than OS 9. Check the termination switch on the last device in your SCSI chain to make sure active termination is turned on. Also, you should make sure your SCSI cables are high quality and the chain is as short as possible.

34 Problem: Poopy PPP

Although my Mac has no problems when I'm running OS 9, in OS X the dial-up PPP performance is horrid. At best it's slow and erratic, and sometimes it drops my connection within seconds.

Solution: Open up the Network pane of the System Preferences. Choose the PPP tab, then click the PPP Options button—uncheck the box labeled Use TCP Header Compression. If dial-up performance remains poor, go to the Modem tab in the same Network Pane and throttle your modem speed down from v.90 (a theoretical maximum of 56 Kbps) to v.34 (33.6 Kbps). This slower transmission rate can handle noisier phone lines than v.90, and OS X seems to favor it.



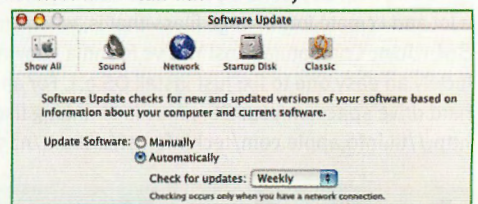
If poor dial-up PPP access is giving you fits, try turning off Use TCP Header Compression and slowing your modem to v.34 (33.6 Kbps).

35 Problem: Kernel Panics

My Dual-Processor G4 totally freaks out when I try to use my internal modem to access my ISP over PPP. The screen freezes, and black bars with incomprehensible code in white lettering march across the screen. I have to reboot to get my system up and running again. Help!

Solution: You have experienced the lovely event known as a kernel panic—OS X's equivalent of the Sad Mac. The code that appears during a kernel panic has meaning, but only to those few geniuses who fully understand the deepest level of the OS, the Mach kernel. Luckily, Apple's engineers seem to be doing a good job of fixing the causes of many kernel panics, and the latest OS X updates seem to fix most Dual-Processor G4 PPP panics. The lesson? Every couple of weeks, hop on over to the Software Update pane of the System Preferences application and press Update Now. Better yet, set Software Update to check for new stuff automatically.

In these early days of OS X development, it's a good idea to set your Mac to check for frequently updated system software.



Uninstalling Mac OS X Apps

After using a new OS X application for a couple of weeks, you've decided that it's simply not worth the hard drive space it occupies. Luckily, uninstalling an application in OS X isn't difficult.

1. Track down the folder that contains the application—it should be in the Applications folder in the root level of your startup volume—and drag it into the Trash.

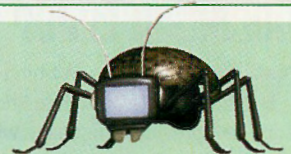
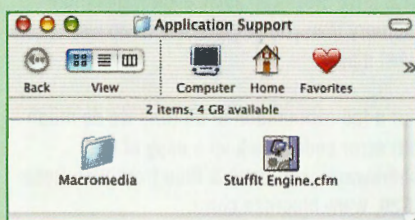
2. Open the Library folder at the same root level and find the folder called Application Support. Open that folder and find any folders with the developer (for example, Macromedia) or application name (such as FreeHand 10). Trash anything you see in there that's directly related to the application—but take care not to trash items other apps might share. Luckily, it's fairly

If you're trying to rid yourself of FreeHand 10, it's a good bet that you'll find no-longer-needed support files in that Macromedia folder.

easy to identify what files apps might share: They usually have extensions of .cfm, .dyld, or .lib. When in doubt, don't trash a file.

3. Go to your Home directory, open your Library folder, and find the Preferences folder. Open it and track down any files or folders unambiguously named after the application you're uninstalling.

4. Empty the Trash. The unwanted application is now gone.



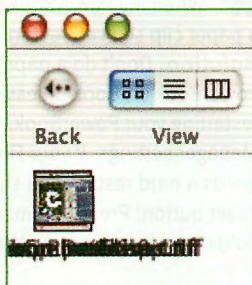
36

Problem: Jerky Windows

When I resize my window by dragging the tab in the lower-right corner, the movement is annoyingly jerky.

Solution: If you're in list view, window resizing is about twice as jerky as when you're in icon view. Switch to icon view by choosing As Icons in the Finder's View menu. The action is still somewhat jerky, but that's as good as it gets. Unfortunately, icons tend to migrate all over the place when you switch views. You can send them back to their proper places by choosing Arrange By Name in the Finder's View menu. And no, they won't necessarily remain where you put them.

Like headstrong teenagers, OS X Finder icons simply go wherever they want. Here, they seem to want to play Pile On.



37

Problem: Silent Sound

I have either headphones or external speakers plugged into my Mac. They work fine in OS X, but after I reboot into OS 9.1, the sound is muted. When I try to drag the slider away from mute in the Sound Control Panel, it snaps right back. If I unplug the speakers, my Mac crashes.

Solution: Apple knows about this bug, and with any luck at all we'll get a fix in an upcoming OS X update. Until that happy day (which hadn't arrived as of press time), you have two choices:

1. Unplug the headphones or external speakers before restarting in OS 9.1, then plug them back in after OS 9.1 fully launches.
2. Instead of using the Apple Menu's Restart command, select Shut Down and then start up OS 9.1 from ground zero.

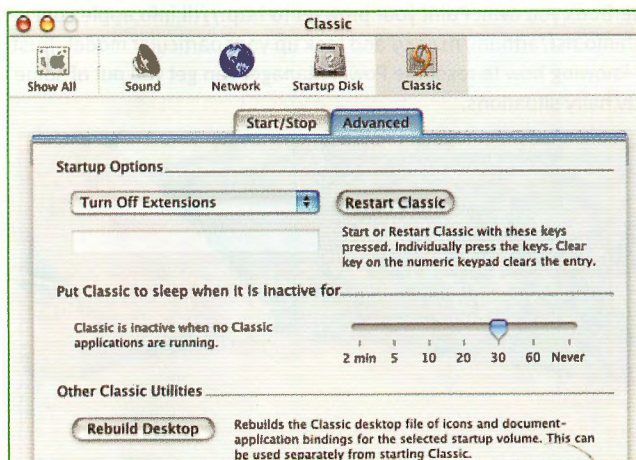
38

Problem: Classic Lethargy

Classic seems to run pretty well, but just takes forever to launch.

Solution: Classic takes its own sweet time while launching, but the following procedure should help:

1. When in Classic, go to the Apple Menu Options control panel. Turn off Submenus and uncheck the Remember Recently Used Items box.
2. In your Extensions Manager, turn off all nonessential extensions and control panels. (Do you really need Speech?) Just don't touch anything in the Classic Compatibility Environment under the Package column.
3. Go to the Classic pane of System Preferences, select the Advanced tab, and click Rebuild Desktop. Be prepared for this operation to take a while—half an hour is not an unusual amount of time to wait.



Rebuilding the Classic desktop file will speed Classic's launch process—not a lot, but every little bit helps.

For More Information...

If you really want to be a troubleshooting guru, check out these resources.

Web Sites

Apple Tech Info Library
<http://til.info.apple.com>

Whenever Apple admits to a problem (to the company's credit, it doesn't try to hide much), it publishes a concise Web-based article describing that problem, its symptoms, the products affected, and what—if anything—you can do about it.

Apple Knowledge Base

<http://kbase.info.apple.com>

You can access the thousands of helpful articles in the Tech Info Library through the Apple Knowledge Base interface, which leads you to the information you need through a series of questions.

MacFixit

www.macfixit.com

Got a problem you can't solve? Drop in on the discussions in the MacFixit forums. You're likely to find somebody there who has already felt your pain.

MacInTouch

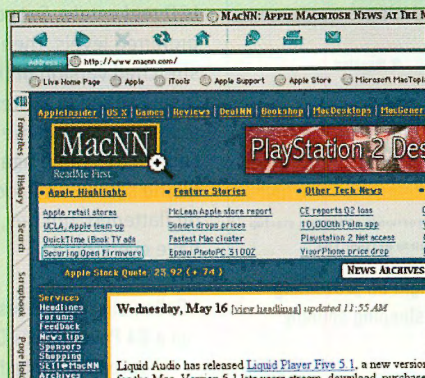
www.macintouch.com

The quality of the troubleshooting tips, reader contributions, and product information posted to MacInTouch makes a daily visit a must.

MacNN

www.macnn.com

The Macintosh News Network site is a rich compendium of news, reviews, features, and industry insight, complete with one-click links to other sites' current hot hardware and software deals.



MacNN is a great place to keep up with everything Mac.

VersionTracker

www.versiontracker.com

If you have only one bookmark in your browser, make it VersionTracker. This site provides up-to-the-nanosecond information on Mac freeware, shareware, and commercial apps.

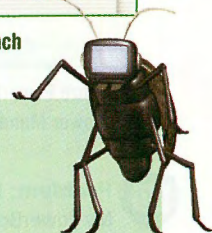
Books

***Sad Macs, Bombs, and Other Disasters*, fourth edition, by Ted Landau (\$34.99, Peachpit Press, 2000)**

It's easy to tell a true Mac expert from a poseur: The real deal has a well-thumbed copy of this book sitting right next to his or her Mac. If anything can go wrong with a Mac, Landau knows about it—and knows how to fix it.

***Troubleshooting, Maintaining, and Repairing Macs*, by Ryan J. Faas with Stuart Brown and Kim Foglia (\$59.99, Osborne McGraw Hill, 2001)**

Despite the fact that this three-pound leviathan reads at times as if it were edited by a struggling ESL student, it provides a thorough overview of recent Mac hardware—a topic not covered in *Sad Macs, Bombs, and Other Disasters*. In addition, it includes a CD-ROM packed with shareware and demos.



Portable Problems

The worst part about experiencing a PowerBook problem is that it's likely to happen when you're on the road. Nobody likes getting stranded away from home, so bone up on your PowerBook troubleshooting knowledge now.



39 Problem: Mangled Power Manager

My PowerBook or iBook is acting very strangely. It has an oddly short battery life, it doesn't recognize the AC adapter or battery, or it crashes when the AC adapter is plugged in.

Solution: Reset your Power Manager, which is responsible for, uh, the power management of the PowerBook. Unfortunately, there are a dozen different ways to do this, depending upon which type of PowerBook you own. Point your browser to <http://til.info.apple.com/techinfo.nsf/artnum/n14449> and look up your particular model. Trust us—knowing how to reset the Power Manager can get you out of some pretty hairy situations.



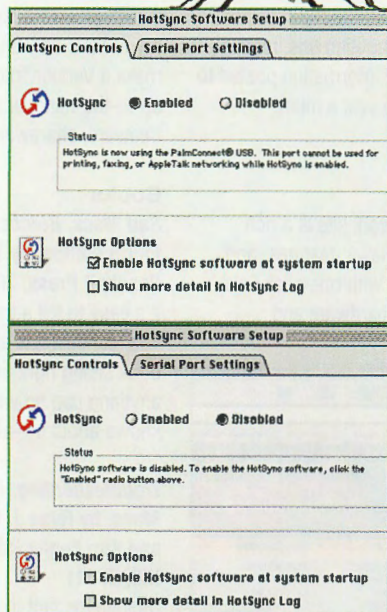
On a Bronze PowerBook, taking a paper clip to the reset button resets Power Manager.

40 Problem: Not-Sleeping Sickness

My PowerBook or iBook refuses to go to sleep, even though I told it to.

Solution: There are a number of reasons why a PowerBook may not sleep soundly. Here's a sampling:

1. The Energy Saver (or on earlier PowerBooks the PowerBook control panel) has its Sleep slider set to Never.
2. File Sharing is turned on.
3. AppleTalk is set to Active.
4. Dial-up communications programs such as PPP, FAXstf, and Apple Remote Access are checking your PowerBook's modem port for incoming calls because you have your modem set to autoanswer.
5. If you're using a DHCP server, your browser or email application is open or you have a server volume mounted.
6. Palm's HotSync software is enabled. Disable it—and to be doubly careful, don't set it to launch at startup.



Your Palm software might be preventing your PowerBook from sleeping soundly. Top, bad; above, good.

41 Problem: Reset It Right

When my PowerBook or iBook crashes, it's a pain to have to find a paper clip so I can restart it.

Solution: Don't do a paper-clip reset on your FireWire-equipped PowerBook or iBook unless you absolutely have to. In addition to restarting your PowerBook, this also resets your PRAM and Power Manager settings. If your FireWire-equipped PowerBook or iBook needs a hard restart, you should use the keyboard equivalent of the Reset button: Press Command-Control and the power button, or simply hold down the power switch for 5 seconds (this turns the Mac off).

42 Problem: Blind and Mute

Sometimes after I zap the PRAM on my PowerBook 1400, the screen is black and my sound is dead.

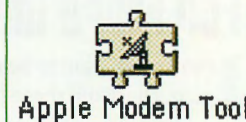
Solution: Apple calls this "an intermittent software behavior." PowerBook 1400 owners call it a pain in the butt. Luckily, it's pretty easy to fix—just press the reset button on the back of the PowerBook, and it should start up in a better mood.

43 Problem: Bad Ethernet

I have a PowerBook 3400 or PowerBook G3, and my Ethernet port isn't working.

Solution: The Ethernet port on the PowerBook 3400 and some PowerBook G3s won't work unless the Apple Modem Tool extension is installed. Whether you're using an internal or external modem—or whether you ever use your modem at all—you must reinstall this extension from your OS installation CD.

We know it's called the Modem Tool extension, but without it the Ethernet port on some PowerBooks won't work.

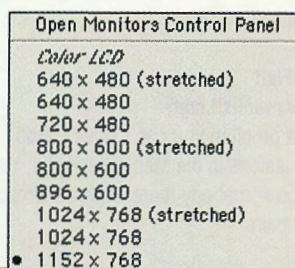


44 Problem: TiBook Screen Stretching

Sometimes when I'm playing a game on my PowerBook G4, the game image doesn't fill the entire screen—black bands show up on either side.

Solution: The resolution of what CEO Steve modestly calls the megawide screen of the Titanium PowerBook G4 is a nonstandard 720 by 480, 896 by 600, or 1,152 by 768, not the 640 by 480, 800 by 600, or 1,024 by 768 for which developers have designed games. Apple provides a way to "stretch" a game's display to cover all that gorgeous LCD real estate. Set your game's resolution and color depth to your preferred levels, then quit the game. Then set your display to the stretched version of the resolution you just chose. In OS X, open the Display pane in System Preferences. In OS 9, Option-click the resolution icon in the Control Strip (it looks like a tiny checkerboard). Launch the game again, and it'll fill the screen—it'll look a wee bit flattened, but hey, you can't have everything.

Option-clicking the resolution icon on a G4 PowerBook's Control Strip reveals stretched resolutions designed for gameplay.



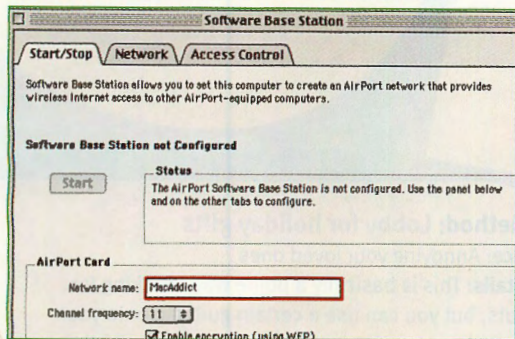
Networking Nightmares

No Mac is an island. Especially today, a Mac without an Internet or LAN connection is a rare Mac indeed. Too bad networks are so freakin' complicated!

45 Problem: AirPort Congestion

I have two AirPort Base Stations. When both are on, file-transfer performance goes downhill.

Solution: Sounds like you set the Base Station channels too close together—or to the same channel. Set them so they're at least three numbers apart (for example, 1 and 4), since there's some "bleed" from the center of each channel into the next channel.



Change channels in your AirPort app by clicking the AirPort Software Base Station button and selecting the Start/Stop tab.

46 Problem: International AirPort Incidents

I was on a flight to Tokyo to set up a new office and I was working on my AirPort-equipped iBook. Suddenly, the plane took a nosedive 20,000 feet and nearly crashed into the Pacific. I shut down my iBook so I could scream uncontrollably without distraction. Luckily, the pilots skillfully regained control of the aircraft.

The next day, while setting up the office, armed police rushed in and arrested me—but I have no idea why. I'm now languishing in the local *rogoku*, having wasted my one phone call on AppleCare rather than the U.S. Embassy. What gives?

Solution: Blame it on AirPort. AirPort cards can disrupt avionics—that may have caused your dizzying descent of doom. You should always turn off your AirPort card via the Control Strip while you're flying.

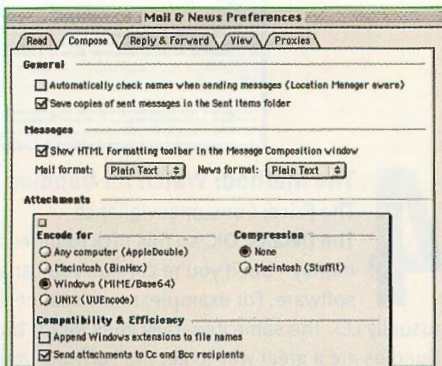
You were arrested because your new office's AirPort Base Station was set to a U.S.-approved channel (between 1 and 11) and not Channel 14, the only one approved for use in Japan. Before traveling overseas with AirPort next time, check the Apple Tech Info Library to find out what channels you can use.

47 Problem: PC-Speak

My PC friends (yes, I admit I have some) complain that their brain-dead machines can't open any files I email them.

Solution: Your email program is probably set to encode attachments in a Mac-centric encoding scheme such as BinHex or MacBinary. Go to the Preferences dialog of your email program and select MIME/Base64. AppleDouble will also work, but it's not as surefire. (Linux and/or Unix users prefer uuencode.)

Select MIME/Base64 when sending emails to those saddled with PCs.



48 Problem: PPP Sharing

I want to share my dial-up PPP connection between several Macs, but neither OS 9.1 nor OS X offers this feature.

Solution: This omission is what Apple calls a "third-party opportunity." Luckily, third-party vendors have come to the rescue with Vicomsoft's SurfDoubler (\$35, www.vicomsoft.com) and Sustainable Softworks' IPNetRouter (\$89, www.sustworks.com). Alternately, you can always get AirPort.

49 Problem: Sharing Across Generations

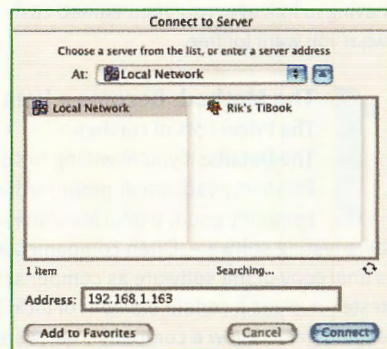
I can't figure out how to enable File Sharing between an OS 9.x Mac and an OS X Mac on the same Ethernet network.

Solution: 1. On the OS 9.x Mac, go to the File Sharing control panel—turn on File Sharing and check the Enable File Sharing Clients To Connect Over TCP/IP box. Set the AppleTalk control panel to Ethernet. Finally, set the TCP/IP Control Panel to Ethernet and make sure your IP address configuration (Manually, DHCP, and so forth) is set correctly.

2. Next, go to your OS X Mac and select Built-in Ethernet And TCP/IP in the Network pane in System Preferences. Also make sure the IP address configuration is set correctly.

3. In the OS X Finder, select Connect To Server from the Go menu. If you're lucky, the OS 9.x Mac will show up in the central window of the ensuing dialog after you select Local Network.

4. If you're unlucky and the OS 9.x Mac doesn't show up, find the 9.x Mac's IP address in its TCP/IP Control Panel, then type it in the Address field in the OS X Mac's Connect To Server dialog. Click the pulsing blue Connect button.

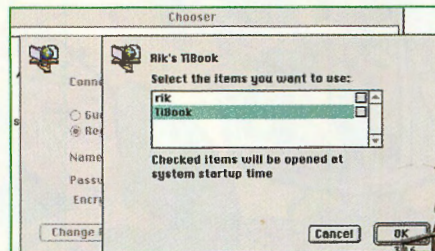


Be ready to enter the OS 9.x Mac's IP address.

50 Problem: Share It All

I have an OS X Mac and an OS 9.x Mac on the same Ethernet network with File Sharing enabled. However, my OS 9.x Mac will only mount the Personal folder in the Home directory of my OS X Mac.

Solution: If you're not registered as an OS X Admin-level user, you can't share folders other than your Personal folder. If you are registered as Admin, go to your 9.x Mac, choose Registered User (not Guest) when you mount a volume via the Chooser, type in your OS X password, and two volumes will appear—your Home directory and the entire volume. Don't choose both—since the Home directory is part of the entire volume, that would mess with the file system's mind, which may cause data loss.



If you're an Admin user, you can mount your OS X Home directory—or the entire volume—on the desktop of an OS 9.x Mac.



10

Something for nothing: We all want it, but none of us is going to get it. Whether it's increased entropy or karmic debt, you always have to pay a price.

But that price doesn't have to be cold, hard cash, at least not when it comes to software. With the right attitude, the right resources, and some pure perseverance, you may never have to pay for software again. Simmer down there, Junior. Before you get *too* excited, this article is not a treatise on how to pirate software. Rather, it's meant to explore legal ways to do everything you want on your Mac without having to fork over your hard-earned cash. Here's our take on how to get what you want for free.

1 The Method: Become a beta tester

The Price: Lots of crashes

The Details: If you're willing to subject your Mac to not-quite-finished (read: crash-prone) software and you're glad to give a company good, useful feedback, then you should consider

beta testing software. Often companies award good beta testers with a final copy of the software as compensation. Getting to be a beta tester involves a certain element of luck, but if you're serious, you should get to know a company's software, then see if it has a beta-testing program. If you're not good at keeping secrets, forget it—companies are interested in folks who know their software and will give them great feedback without spilling the beans about prerelease software to anyone else.



If you've got lots of free time and patience, try your hand at beta testing.

2 The Method: Lobby for holiday gifts

The Price: Annoying your loved ones

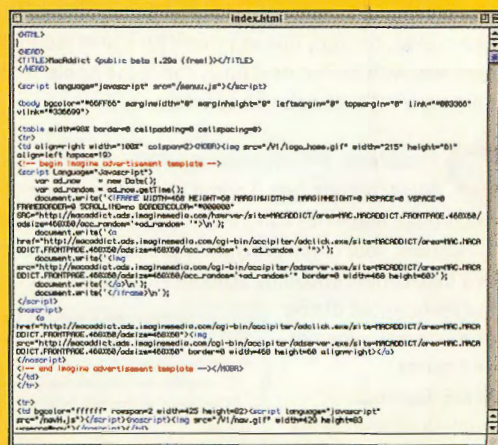
The Details: This is basically a polite way of asking for handouts, but you can use a certain guilt factor to your advantage because the request centers on your birthday and the holiday season. Pick one program within your giver's means and suggest it as a potential gift. Who knows—you might just get it. Beware of going overboard with this method, though, or you'll blow the whole deal.

3 The Method: Use what you've got

The Price: Lowering your expectations

The Details: This involves being satisfied with what you have—never an easy task. Every Mac sold today ships with basic software (such as SimpleText, Internet Explorer, and Outlook Express) that lets you create text documents, browse the Web, and send email. Plus, most Macs now ship with iMovie and iTunes for digital video and MP3s. If you're a minimalist, this method will go a long way.

If you don't mind keeping your Web pages under 32K of HTML, you can use SimpleText to build a whole Web site for free!



4 The Method: Watch for bundles

The Price: Consumer vigilance

The Details: OK, so this trick requires that you spend some money—but if you're careful, you can avoid spending it on software. For example, many scanners bundle Photoshop (usually LE). The same generally goes for CD burners and Toast. Bundles are a great way to get the software you need, plus you generally get a good deal on the hardware that goes along with it.

Surefire Ways to Never Pay for Software Again!

by David Reynolds illustration by Jack Davis

5 The Method: Enter *lots* of contests

The Price: Spending a lot of precious time filling out forms and your name on spam lists all over the world

The Details: Mac magazines and Web sites give away a lot of software, and these contests don't cost a penny, so enter every one you see—you have better odds of winning a program than of winning the state lottery. You might want to set up a Web-based email account for the purpose so you don't get swamped with spam. Another contest gold mine is Macworld Expo, so attend if you can.

6 The Method: Get thee to a computer lab

The Price: Suffering through classes

The Details: Most higher-education institutions have student computer labs that have computers (often Macs) with great software installed. Take a class at your local community college, and you'll probably get access to your school's lab. The class may cost a little money, but the value of lab access is priceless.

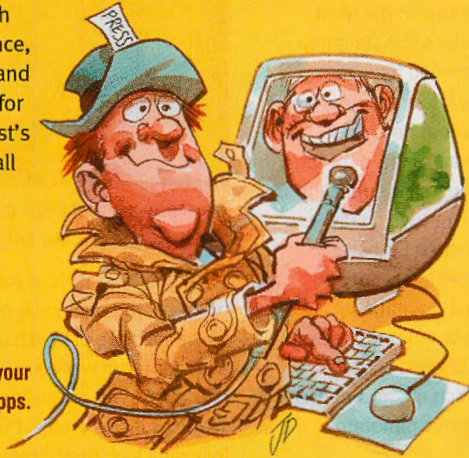
7 The Method: Get a job at a Mac publication

The Price: Your eternal soul

The Details: Sure, we get paid to play with the latest software and hardware, but working at a Mac publication takes a person with

lots of Mac experience, solid writing skills, and willingness to work for a computer journalist's salary. With the small number of job openings at these publications, you might be better off entering contests.

A job at a Mac pub is your press pass to free apps.



8 The Method: Compile and use *nix applications

The Price: Learning obscure Unix commands

The Details: If you're running Mac OS X, you have access to a huge bucket of programs with some awesome abilities—for example, Web-server software and powerful graphics apps.

The price? These programs are often distributed as source code, and you have to compile them yourself into usable programs. First you'll have to learn a little about Unix, then you'll need to learn to actually compile source code into a usable program. Check out www.macaddict.com/osx/xphiles/11_02_00.html for a quick primer.

9 The Method: Use freeware

The Price: You might not find what you're looking for

The Details: The many very capable freeware programs available for the Mac let you do all kinds of amazing things, and they cost nothing. Search VersionTracker (www.versiontracker.com) for the type of software you're looking for, and then check to see if it's free.

With an advanced search at VersionTracker, you can find oodles of free software.

Advanced Search

Search for: all of these words

Search for: That are:

☒ Name ☒ freeware ☒ commercial (update)

☒ Description ☒ shareware ☒ beta

☐ Long Description ☒ commercial

☐ Manufacturer (upgrade/new product)

In these categories: (Requires Javascript)

<input checked="" type="checkbox"/> Audio	<input checked="" type="checkbox"/> Finance	<input checked="" type="checkbox"/> Math/Scientific
<input checked="" type="checkbox"/> Business	<input checked="" type="checkbox"/> Font Tools	<input checked="" type="checkbox"/> Multimedia
<input checked="" type="checkbox"/> FTP/Progress	<input checked="" type="checkbox"/> Games	<input checked="" type="checkbox"/> Networking/Administrator
<input checked="" type="checkbox"/> Developer Tools	<input checked="" type="checkbox"/> Graphics	<input checked="" type="checkbox"/> System Utilities
<input checked="" type="checkbox"/> Drivers	<input checked="" type="checkbox"/> HTML Tools	<input checked="" type="checkbox"/> Utilities
<input checked="" type="checkbox"/> Educational	<input checked="" type="checkbox"/> Internet Utilities	<input checked="" type="checkbox"/> Word Processing/Text Tools

Released within: All

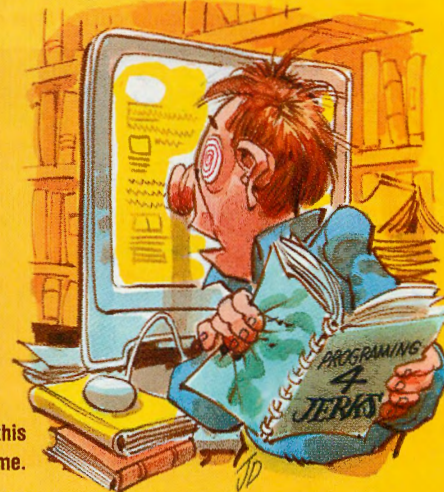
Sort results by: Name

10 The Method: Write your own programs

The Price: The pain of learning how to program

The Details: If you don't mind digging into binary arcania, you can create your own software. Although you might have to pay for the program with which you *build* your programs, the apps you make are free. You can even sell them. Check out RealBasic (www.realbasic.com), Code Warrior University (www.codewarrioru.com), and MacAddict's "Build Your Own Apps" article (Feb/01, p24).

Despite what your friends may say, this is a *fine* way to spend your free time.



David Reynolds still waits for the morning FedEx delivery like a child waits for Christmas.

reviews

A summer vacation waiting to happen.

Myst III: Exile

fun & games

Company: Presto Studios

Contact: 858-622-0500, www.presto.com

Price: \$44.99 (SRP)

Requirements: 233MHz G3 or faster, Mac OS 8.1-9.1, 64MB RAM, 200MB free hard disk space, CD-ROM drive



FREAKIN' AWESOME!
The most valuable products, the coolest gizmos.



SPIFFY
A solid offering. Overall a good investment.



YEAH, WHATEVER
Neither recommended nor rejected. Some might like this, but we weren't impressed.



BLECHI
Give us back the time we spent testing this.

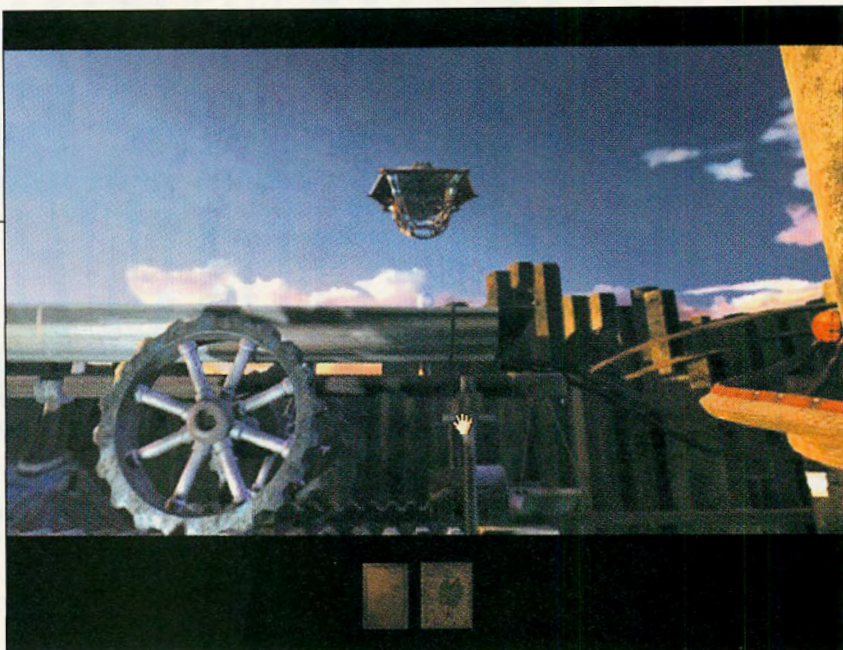


Find Myst III: Exile
Theatrical Trailer on The Disc.

In this age of first-person death matches and frag fests, it's hard to imagine a gaming company having the cojones to come out with an exploratory adventure title—especially one in which you can never die no matter how hard you try. However, *Myst III: Exile* is no ordinary adventure title. It's the third installment of one of the best-selling computer games ever made, and this latest chapter doesn't disappoint.

The original *Myst*, released by Cyan in 1993, stumped and awed adventure seekers with an engaging storyline. It successfully sucked you into a virtual 3D world, causing you to sit for hours in front of your computer, pointing and clicking in hopes of unraveling the mysterious storyline. Using the same amalgamation of intriguing exploration and brain-numbing puzzles as the original, *Myst III* continues to deliver.

Exile is a first-person perspective, puzzle-solving game that unravels the story of the Ages and the history of the characters you encounter as you progress—much like reading a mystery novel. At the beginning, Atrus, your mentor, informs you that his book, or "Age," known as *Releeshahn* has been stolen. Throughout the *Myst* series,



An interesting example of one of many puzzles. Solving this one requires Sherlock skill.

books/Ages are, in essence, portals to different worlds, and *Releeshahn* was created to serve as a refuge for survivors of another destroyed Age. It's your job to find the villain who stole *Releeshahn* and return the book to Atrus, thereby saving the lives of thousands of people who live within the Age.

While the original *Myst* fit onto one CD-ROM, *Exile* spans across four. Luckily, if you've got the vacancy, you have the option of installing all the data from three of the discs onto your hard drive, negating the need to swap discs during gameplay (something that drove us nuts with *Riven*'s five discs, the second game in the *Myst* series). Unfortunately, the full installation procedure is not simple—you have to manually copy the data folder from each disc to a certain location on your hard drive, a process that should be automated through the installer application.

Once we finally launched *Exile*, we immediately noticed some dramatic improvements. One of the biggest is *Exile*'s full-screen, 360-degree, dynamic panoramic

Brad Dourif (aka Chucky from *Child's Play*) gives a spooky, and commanding performance as Saavedro, the villain.

technology. You can look up, down, and all around from anywhere you stand. In addition, if there's something moving in a scene, such as a bird flying in the distance or water shimmering, you can still look around while the bird and water continue to do their thing. You're no longer locked into a view and forced to watch a QuickTime movie unless it's integral to the gameplay.



We vacationed in the Age of Dynamic Forces and all we brought you was this picture.

A good example of the interface dynamics occurs at the beginning of the game when Catherine, one of the characters, walks across a room while speaking to you. If you look away, she continues moving in the scene as if she's really there, with her voice following her every move—depending on her direction and your line of sight, sound shifts from left to right and even behind you, making the experience more engrossing.

The 3D graphics are stunningly beautiful. However, it's apparent that the attention to



detail isn't on par with its more realistic predecessor, *Riven*.

The puzzles in *Exile* are, for the most part, brilliant, especially those found in *Amateria*, the *Age of Dynamic Forces*. All of the puzzles tie in with each other well and work like one big combination lock. While we won't give away the big pay-offs, we will tell you that the rewards are both surprising and fulfilling.

Of course *Exile* has its share of duds; a couple of puzzles aren't as clever as we expected and frankly don't make a whole lot of sense. That is, unless you take the time to read Atrus's and Saavedro's (the psychotic villain) journals, for which we had little patience. At press time, the game was not Mac OS X-compatible, though Presto informed us that a Mac OS X version is on its way.

Exile's full-motion video characters are intriguing—it's nice to see Rand Miller, one of *Myst*'s original developers, reprise his role as Atrus. *Exile* also features perfectly cast Brad Dourif (nominated for an Academy Award for his role in *One Flew Over the Cuckoo's Nest*) as Saavedro. Although the acting is a tad over-the-top, his performance is memorable, especially in the end, where he starts to... OK, we're not that mean.

The music throughout the game is more ambient than either *Myst* or *Riven*. Gone are the mono, 8-bit, hissy sounds of old. *Exile* employs lush, clean sounds, including voice and choir passages, orchestral pieces, and even some rock-like drum patterns. We also could have sworn we heard bits of the original *Myst* theme at times.

So, what's the verdict? If you're not impressed by beautiful graphics, mesmerizing music, clever puzzles, and a captivating story line, and you live and breathe by the hard-core gamer's mantra, "kill everything that moves," you won't enjoy *Exile*. However, if you thrive in puzzling situations and enjoy being whisked away to other worldly locales, *Myst III: Exile* is one thrilling ride.—Andrew Tokuda

good news: True to the *Myst* style. Improved graphics engine. Great music. Clever puzzles.

bad news: Graphics not as detailed as *Riven*. Odd full-install option.



A Meeting of the Minds

The original, best-selling computer game of all time, Cyan's *Myst* defined the point-and-click adventure game genre, becoming a truly hedonistic salvation. Around the same time, Presto Studios released *The Journeyman Project*, which one-upped *Myst* by employing a more-involved interface and an inventory system, but lacked spectacular graphics—plus, you could die in the game. It was only a matter of time before both Cyan and Presto would come together. Here's a brief look at both companies' evolution and ultimate convergence.



1993
Myst hits store shelves and millions of healthy normal people become hermits. Back in this day, Power Macs didn't yet exist and 3D rendering was processed using 68K Quadras.



1993
The Journeyman Project was released shortly after *Myst*. Though the game proved popular, its graphics were lackluster compared to *Myst*'s.



1995
The Journeyman Project 2: Buried In Time outshined the original *Journeyman* by employing full-motion video, animation, and the ability to look up and down.



1997
Riven, *Myst*'s successor, was visually stunning with photorealistic graphics, animation, and sound, but it was confined to the same slide-show style interface as *Myst*.



1998
The Journeyman Project 3: Legacy of Time unveiled 360-degree panning in its interface. Incidentally, Presto Studios worked with Broderbund, Cyan's parent company, on this title, which likely led to Presto's decision to develop *Myst III: Exile*.



2001
It's an all-new *Myst* game, but it feels like home. Presto Studios expands the *Myst* saga, infusing its own technology with a familiar feel to create *Exile*.

design and graphics

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multimedia

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CineStream 3 p54

Electric Image Universe 3.0

multimedia

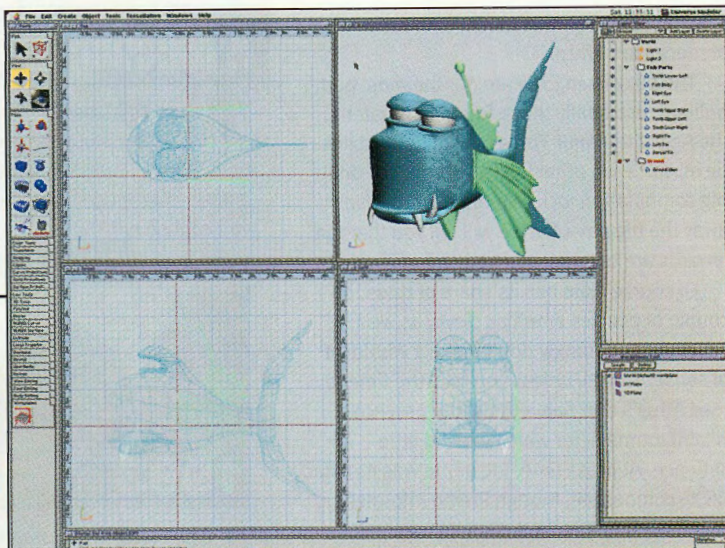
Company: Electric Image

Contact: 714-433-0400, www.electricimage.com

Price: \$1,995 (SRP), \$495 upgrade from EIAS 2.8 or older, \$295 upgrade from EIAS 2.9 Modeler

Requirements: Power Mac 604 or faster, Mac OS 9 or later, 64MB RAM, 120MB free hard disk space, CD-ROM drive, available USB port for dongle

The Modeler interface allows you to design practically anything that springs from your imagination.



What's faster than a barreling tyrannosaur, more powerful than the Force, and able to render complex 3D models in a single pass? The mighty Electric Image Animation System (EIAS), of course. Now dubbed Electric Image Universe, this well-known computer animation system returns with version 3.0 and includes a host of new features, a rewritten core, and multiplatform capability that render it more awesome than ever.

Every serious Mac 3D animator knows about—and very likely has used—EIAS. Legendary for the impressive quality and speed of its render engine, this 3D computer animation package is now back in the hands of its original owners after Play bought and sold it. You've probably seen its handiwork in a zillion TV commercials (Sony PlayStation, Hanes, MGD), television shows (*The X-Files*, *Deep Space Nine*, *The West Wing*), and feature films (*Star Wars: The Phantom Menace*, *Jurassic Park*, *The Mask*).

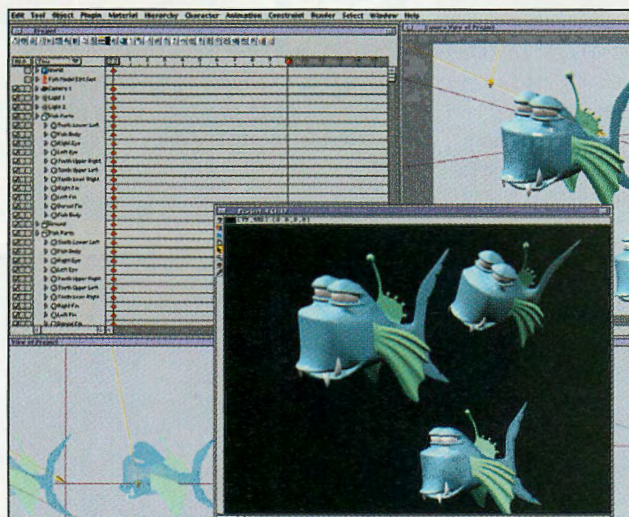
Though its cost might induce a heart attack, Universe offers significant tools for professional 3D animators. Once a Mac-only package, it's now available in three flavors: Mac, Windows, and Sun Solaris. Users can open, edit, and render projects created on one platform in any of the other supported platforms. In addition, Universe supplies the render engines for all platforms no matter which version you buy, allowing a studio to utilize all of its hardware for rendering final frames. Universe is composed of three separate applications—Modeler (for designing), Animator (for bringing to life), and Camera (for rendering)—all rewritten using a uniform code base.

Modeler uses both solid- and surface-modeling techniques, supporting polygons, NURBS (Non-Uniform Rational B-Splines), and subdivision surfaces called Über-NURBS. It also provides a rich set of tools for building realistically complex organic and mechanical shapes, and supports a variety of file formats. Modeler saves work in its own

Animator is the soul of Universe, giving life to static models with its vastly improved inverse kinematics system. You can create anything from smoke-filled titles and particle explosions to Air Force One in flight and X-Wing versus Tie Fighter dogfights in space. Besides FACT, Animator supports over 30 file formats from other applications. You can also render features such as glows, blurs, and particles, or add textures and shaders to models before rendering them. Plus, you can view real-time shaded previews instead of wire-frame skeletons, thanks to the new OpenGL support.

Camera's amazing render output is the reason many artists chose Electric Image in the past, and the new version takes it even further with some remarkable new features—most important, ray tracing. Ray tracing generates an accurate representation of surfaces and light, and Camera's ray tracer is nothing short of stunning. It produces remarkable images that blow away just about every other package's. You pay a price in terms of time, but this ray tracer is still a speedy render engine.

Though pricey, Universe packs in substantial value with its powerful modeler, solid animation environment, and license-free multiplatform render engine. For anyone who thought this program was withering in the hands of Play, Electric Image has proven that Universe is alive and heartily kicking. —Mike Caputo



proprietary format, but you must export them to the FACT format before using models in Animator. This can be problematic if you want to edit a model after you begin animating—you have to make changes to the original Modeler file, then export it again as a new FACT file.

Give life to your creations using Animator, part of the Universe package.

good news: Professional, feature-rich 3D graphics and animation system. Fast render engine. Outstanding output quality. **bad news:** Interface is not Mac like. Animator and Modeler don't share file formats.



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Acrobat 5.0

design & graphics

Company: Adobe

Contact: 800-272-3623, www.adobe.com

Price: \$249 (SRP), \$99 upgrade

Requirements: Power Mac, Mac OS 8.6 or later, 32MB RAM, 105MB free hard disk space, CD-ROM drive

We may have a hard time understanding their choice of computer platform, but we still need to share files with our PC cohorts. Exchanging plain-text or image files is a simple affair, but swapping documents that use both can lead to a lot of wasted time as you try to open unreadable files. Luckily there's Adobe Acrobat. Acrobat's Portable Document Format (PDF) is already the unchallenged standard for cross-platform document sharing, and this latest version is a significant upgrade that reinforces that dominant position.

Acrobat's primary function is to transform documents created in other applications into the PDF file format. PDF files are viewable with a free application, Acrobat Reader, available for most operating systems, including Mac OS, Windows, Linux, and variations of Unix. Acrobat works by acting as a virtual printer. To convert a document to PDF, select Acrobat in the Chooser, print your document from its originating application, and save the resulting PDF file to your hard drive. Acrobat retains your original document's appearance, with graphics and formatting intact.

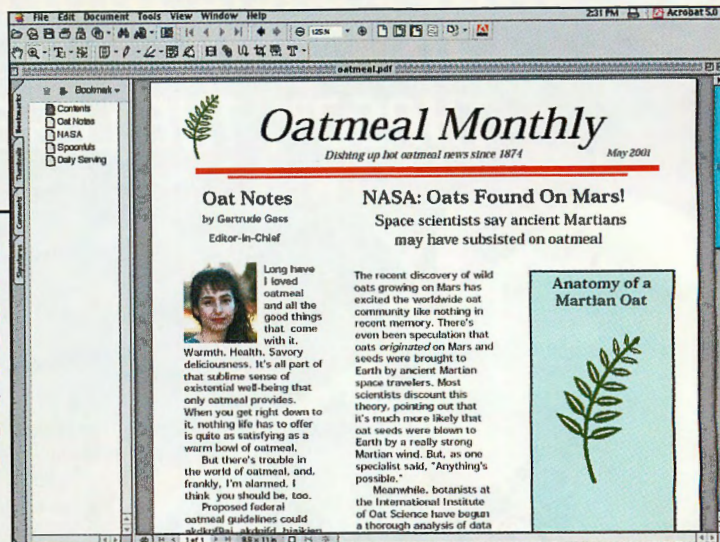
Acrobat 5.0 sports a new, Microsoft Office-like user interface. Adobe apparently thinks that's a good thing.

As expected from a \$249 program, Acrobat does more than just convert documents to PDF. With its extensive editing and annotating features, Acrobat allows users of different platforms to collaborate on documents. It's also a versatile publishing platform, offering extensive printing and color-management controls for four-color printing and the ability to create forms that users can fill out using Acrobat Reader.

So what's new in version 5.0? A revamped user interface, for one. Modeled after Microsoft Office apps, Acrobat 5.0 sports familiar-looking toolbars and tear-away tool palettes, but the new look just made us shrug. The previous interface had some confusing tools and labels, which remain mostly unchanged in 5.0.

Version 5.0 also supports Web Distributed Authoring and Versioning, which lets multiple collaborators use their Web browsers to annotate a single PDF document located on a LAN or Web server. After some initial setup problems, this feature worked

well for us, and it offers some advantages for workgroups with widely dispersed members. However, it is not supported for Mac OS 8.6 users. Acrobat 5.0 also supports digital signatures with 128-bit encryption and features automated extraction of images and graphics from PDF documents, customizable toolbars, XML support for PDF form data, and a nice Compare command that graphically highlights the differences between two versions of a document.



Acrobat's annotation features give you yet more great ways to suck up to the boss.

This new release also enhances some existing features, including printing and color-management controls, form-generation tools, and security settings. Advanced users, especially those who print PDF documents on four-color presses or do a lot of document collaboration, will appreciate these tweaks.

Acrobat was already a well-designed program, and version 5.0 offers some genuine improvements. If you create documents that must be viewable on almost any computer, you need this program. —Eamon Hickey

good news: Powerful program gets even better.
bad news: Some new features not supported in Mac OS 8.6.



Capturing Web Pages

Acrobat 5.0's new Web-capture feature (not available to Mac OS 8.6 users) can capture a Web page or an entire site and convert it to a PDF file. The file retains pictures and graphics, links remain active, and some (though not all) JavaScript routines will run properly. It's simple.

- 1 Launch Acrobat and choose Open Web Page from the File menu.
- 2 In the dialog box, type the URL of the page or site you want to capture and enter how many of the site's levels you want to extract.
- 3 Click Download, then head for the coffee pot while Acrobat does the rest.



Capture all those snazzy graphics and pictures (and ads) with Acrobat's Web-capture command.

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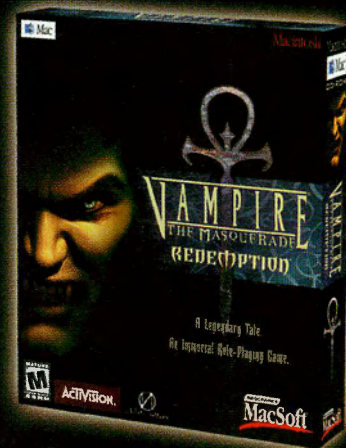
Relive the pen-and-paper role-playing experience with the revolutionary Storyteller system, creating and hosting your own online adventures.



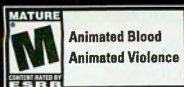
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Sound Blaster Live

hardware

Company: Creative Labs

Contact: 800-998-5227, www.creative.com

Price: \$149.99

Requirements: 120MHz Power Mac 603e or faster, Mac OS 8.6–9.1, 64MB RAM, 10MB free hard disk space, free PCI slot

Recommended: G3 or faster, Mac OS 9 or later, 128MB RAM, Cambridge SoundWorks FourPointSurround FPS2000 Digital speaker system or equivalent

If you're a hard-core gamer or audiophile, it's hard not to suffer from PC envy when you see the sheer variety of sound cards available for Windows users. Granted, a number of higher-end audio cards are available for the Mac, but most are geared toward sound recording. Thankfully, Creative Labs has finally made good on its promise to deliver a Mac version of its successful Sound Blaster Live card, after dangling that carrot in front of our noses for over a year. And this card *really* delivers.

The Sound Blaster Live PCI card targets the consumer market of game and music fans (pro audio engineers should look

3D isn't limited to graphics on the Mac, thanks to the Live card.

elsewhere), providing 3D surround sound; 48kHz, 16-bit audio; digital output; EAX support (high-definition digital sound processing); and MIDI. The card boasts full duplex capabilities (meaning you can simultaneously record and play sound for multitrack recording) and features five 1/8-inch connectors—digital out, microphone in, line in, stereo line out (front), and stereo line out (rear)—and a MIDI connector. Creative plans to develop Mac OS X drivers, but had no specific release date as of press time.

Setup is easy—plop in the card, hook the gear to the appropriate connectors, install the software, and restart. The sound blew us away, thanks to the Cambridge system Creative supplied for testing purposes. (Though we're not reviewing the marketed-in-tandem Cambridge FPS2000

system, we must say that these are some kick-ass speakers!)

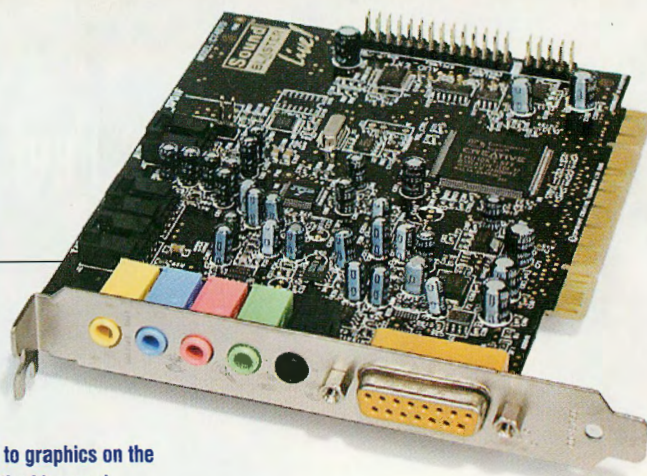
Performance was solid—we recorded synth tracks with a MIDI-connected keyboard, drove the neighbors crazy when we connected our stereo to our Mac, recorded some idiotic sentences using the included desktop microphone, and inexcusably got so involved with *Deus Ex* that we missed our deadline.

If you're looking for a full aural gaming experience or you hanker to make some music, get this card (plus a four-speaker system with subwoofer!).—*Kris Fong*

good news: 3D surround sound on a Mac! Great software bundle.
bad news: 1/8-inch jacks may require adapters. *Deus Ex* made us miss our deadline.



PHOTOGRAPH BY W. B. JONES

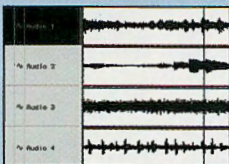


A Blast of a Bundle

While the Sound Blaster Live card certainly stands on its own merit, Creative Labs has done a commendable job of bundling stellar apps that showcase its abilities admirably.



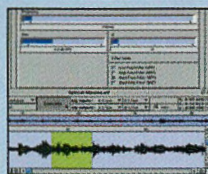
Deus Ex Hook up a digital four-speaker system to Live and surround yourself in 3D audio with this EAX-enabled game. Don't get too lulled by the sounds coming from behind you—they could spell trouble.



Cubasis AV Take advantage of Live's MIDI and 48kHz, 16-bit audio inputs and turn your Mac into a hard-disk recording studio. Cubasis AV (Cubasis VST's little brother) will have you recording and sequencing music in no time.



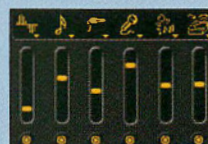
Mixman Studio Connect Live's line out to a stereo system and play DJ with this groove generator and remixer. If you want to save your mixes, connect the card's digital out to a DAT recorder and jam while recording on the fly.



SonicWORX Essential Audio engineers will love this. Edit and shape audio waveforms and then add over 60 effects to a multitrack project with this high-end audio processor. When you're finished, master your recordings to a DAT recorder via Live's digital out.



SoundJam MP If you're lucky or smart enough to invest in a digital four-speaker system, who needs a five-disc CD stereo system? Line up your lengthy playlist of MP3s and boogie down 'til the sun comes up.



Creative Mixer The brain of the Live card, this little utility will allow you to set various parameters for each of Live's audio inputs and outputs, including volume, panning, changing sources, adding effects, and more.



SoundFont Bank Manager This app does double duty as a great-sounding software synthesizer and sampler (if you lack a real one) and a means to audition SoundFont banks for your MIDI-connected devices.



Cute, tiny, and a potential threat to a CD's well being.

PocketDrive CD-RW

hardware

Company: LaCie

Contact: 503-844-4502, www.lacie.com

Price: \$399 (SRP)

Requirements: 233MHz G3 or faster, Mac OS 8.6-9.1, 64MB RAM, 50MB free hard disk space, USB or FireWire port, CD-ROM drive

We wanted to like the PocketDrive CD-RW when we first took it out of its box—it's compact and lightweight enough to throw in a bag, includes both FireWire (two) and USB (one) connectors and the respective cables, and comes with Toast 4.12. We even overlooked the hefty price tag in consideration of its diminutive stature. But performance is what really counts, and if we count the number of unsuccessfully burned CDs that ended up in our circular file (four out of ten), the PocketDrive gets the hook for its less-than-stellar performance.

We're not saying the PocketDrive CD-RW (FireWire: 8X write, 4X rewrite, 24X read; USB: 4X write, 4X rewrite, 6X read) operates at only 60 percent capacity—in fact, we completed regular burn sessions without a hitch (single-session data or audio writing). The problems occurred during multiple-session work. While we had no problem spawning an entire music CD, trying to create a 15-song compilation CD proved impossible—Toast displayed an error message. We made a different 12-song compilation and had the same problem. We finally succeeded when recording just eight songs. With file data, the PocketDrive handled multiple sessions better, though one CD did take a turn for the worse.

Flipping from FireWire to USB didn't seem to resolve any problems or make problems worse—once again, we got a bad burn creating a compilation CD but had no other problems.

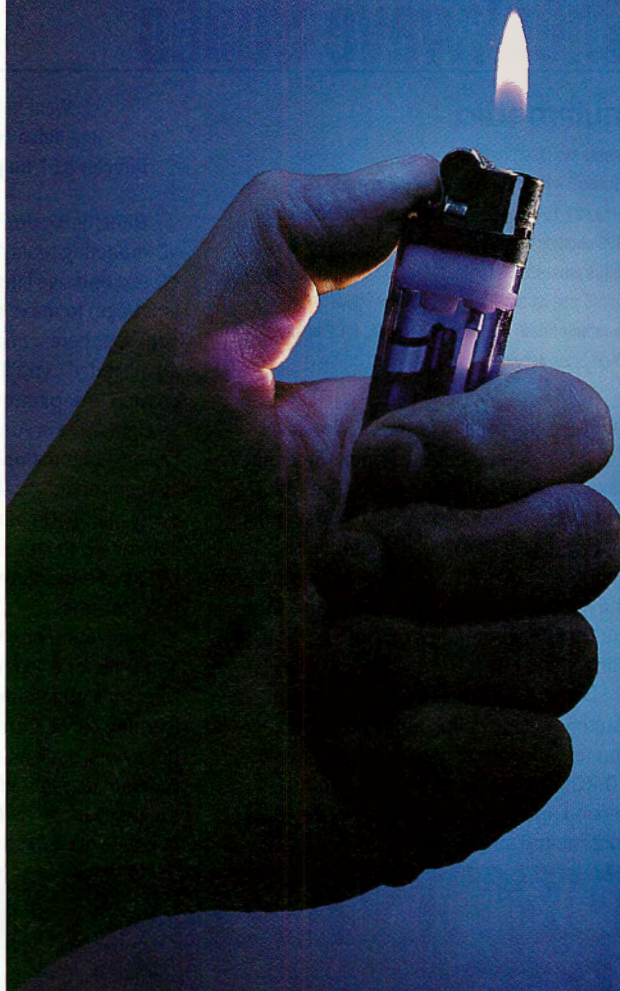
Altogether, the PocketDrive CD-RW is a toss-up: On the one hand, you have great portability and solid performance with single-session burning; on the other hand, you get problematic performance with multiple sessions. Unfortunately for LaCie, our work tends to put us on the other hand.—*Kris Fong*

good news: Portable. FireWire and USB. Bus powered. Includes cables and power supply.

bad news: Expensive. Problems with multisession burning.



Windows
Media Player 7
for Mac



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Turn out the lights and get ready for your own personal concert. The free Microsoft® Windows Media™ Player 7 for Mac gives you access to music, movies and more. From works by the most popular artists and film studios to cool, obscure stuff some guy did in his garage. Whatever you want—it's yours. Rock on.

windowsmedia.com

Microsoft
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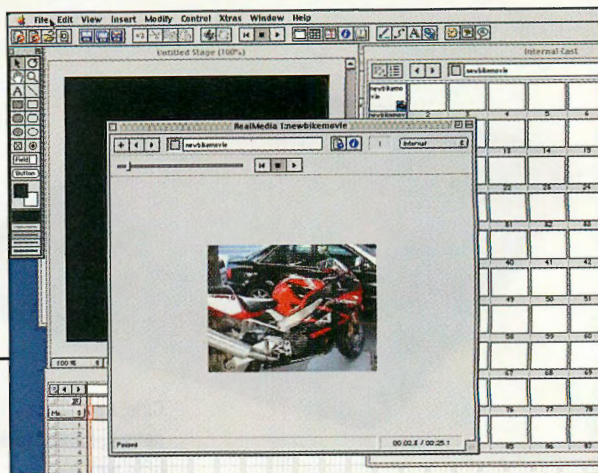
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Director 8.5 Shockwave Studio

multimedia

Company: Macromedia
Contact: 415-252-2000, www.macromedia.com
Price: \$1,199 (SRP), \$199 upgrade from version 8, \$399 upgrade from versions 5 to 7
Requirements: Power Mac, Mac OS 8.1–9.1, 64MB RAM, 100MB free hard disk space, CD-ROM drive
Recommended: G3 or faster, OpenGL 1.1.2 or later, 3D graphics accelerator

Want to use your RealVideo content in Director 8.5? No problem.



Director 8.5 doesn't feature traditional 3D-modeling tools, though you can create 3D text and use Lingo (Director's scripting language) to make primitive shapes such as cubes, spheres, and cylinders. For more-advanced 3D, you'll want to import models created in separate 3D-modeling apps, such as LightWave or Amapi 3D. There is one caveat—before importing, you'll have to convert models to the W3D format. Almost every major 3D-software developer has committed to creating a plug-in converter, but as of press time we're still waiting for the first Mac one.

Innovation often comes at a price, and Director 8.5 is no exception. Many of Director's 3D features have a tremendous learning curve. Barring a few pre-scripted behaviors, such as model rotation, the program doesn't offer many shortcuts for the new functionality—you must learn Lingo to create 3D animations from scratch.

Macromedia supplies a lengthy list of 3D Lingo commands—you need to become familiar with Lingo to use them properly, but the program rewards determination.

Director 8.5 delivers support for RealVideo and RealAudio files, enabling seamless integration of streaming video and audio content. This version also allows Lingo scripts to interact directly with Flash's ActionScript language, enabling better communication and interaction.

While we hope future versions support Mac OS X and feature a more user-friendly authoring environment, Director 8.5 continues to deserve our top honor.

—Patrick Bagatta

good news: Integration with Flash and Real media. 3D for the Web.
bad news: Big learning curve. Additional converters required for importing 3D models.



Find a trial of Director 8.5 on The Disc.

Director 8 received rave reviews when it debuted, including one from us (*Reviews*, Jun/00, p70), and though the half-step up to version 8.5 may have you thinking "maintenance upgrade," 8.5 is anything but. 3D for the Web is a reality—if you're ready to expand your multimedia authoring skills into a whole new dimension, buy this program.

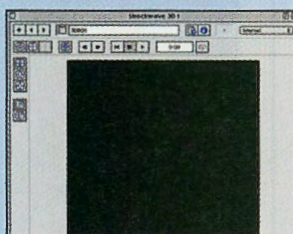
Director 8.5 Shockwave Studio is a multimedia authoring application that allows you to build interactive content for the Web, CD-ROMs, DVDs, and more. This latest version adds support for interactive 3D content and streaming media.

Get Cubed with Lingo

Director 8.5 enables you to create simple 3D shapes, known as *primitives*, using Lingo. Though you can make different

shapes, you create each one in a similar fashion. Here's how you would build a cube:

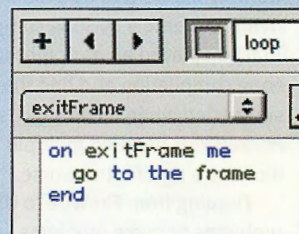
1 From the Window menu, select Shockwave 3D to open a blank Shockwave 3D cast member, then name it *3DBOX*. Drag your new member from the Internal Cast window onto the stage to create Sprite 1. Edit your sprite in the Score window to occupy only the first frame.



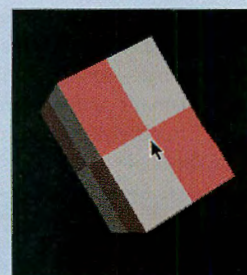
2 Create a new movie script by clicking the second box in the Internal Cast window and selecting Script from the Window menu. In the Script window, type *make box* in the title text box, and the following script in the body as shown.

```
global
on prepareMovie
  BoxRes=member("3DBOX").newMovieResource("BoxRes", #box, #both)
  BoxRes.width = 40
  BoxRes.height = 50
  BoxRes.length = 45
  BoxModel=member("3DBOX").newMovieResource("BoxModel", BoxRes)
  BoxModel.addToWorld()
  sprite(1).camera.translate(0,0,-50)
end
```

3 Double-click the first frame of the behavior channel (the track above the numbered tracks) in the timeline and add the following script in the resultant window to make your movie loop.



4 Press the play button to see your cube appear on the stage and in your Shockwave 3D window. Assign a behavior to add motion.

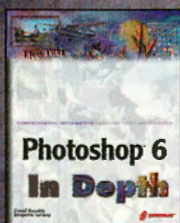
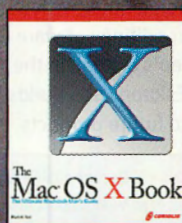


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—Bubba
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MyVideo

hardware

Company: Eskape Labs

Contact: 925-249-6500, www.eskapelabs.com

Price: \$249 (SRP)

Requirements: G3 or faster, Mac OS 8.5.1–9.1, QuickTime 4.0 or later, Apple factory USB or high-power USB port

Friends, take note: We hate it when you sucker us into watching your latest unedited vacation, wedding, or birthday video—the kind that drones on for hours as we squirm on your sofa, praying for a rolling blackout. You've got a computer, so why not take advantage of its video-editing potential? Eskape Lab's MyVideo allows you to capture video from an analog device (like a VCR, TV, or camcorder) to your hard drive, edit your footage, and then play it back through your television or VCR. Too bad it's USB only—this limits its potential.



Getting the full version of Strata VideoShop is one compelling reason to buy MyVideo.

Currently, there are a number of FireWire analog-to-DV devices on the market at about the same price point as MyVideo. If you have FireWire on your Mac, a FireWire converter will give you higher video resolution, better iMovie integration, and full-speed video monitoring through a TV. In that sense, we assume that MyVideo



PHOTOGRAPH BY W. B. JONES

A year or two ago, MyVideo might have made a major impact. With today's FireWire and USB 2.0, its appeal is limited.

appeals to those G3 users without FireWire but with USB. Which Macs fit this bill? Older iMacs, the Lombard (aka Bronze) PowerBook G3, the original iBook, and a few other models. Though the targeted field is fairly narrow, it is a viable one.

When we first tried connecting MyVideo via a variety of powered USB hubs, we couldn't get it to work, possibly because of its high USB-bus requirements (500 milliamps). We ended up sacrificing a built-in USB port on our G4 for testing since MyVideo lacks external power capability. If you have an older G3 with a PCI-based USB card, support may be sketchy. Also note that MyVideo is not Mac OS X compatible.

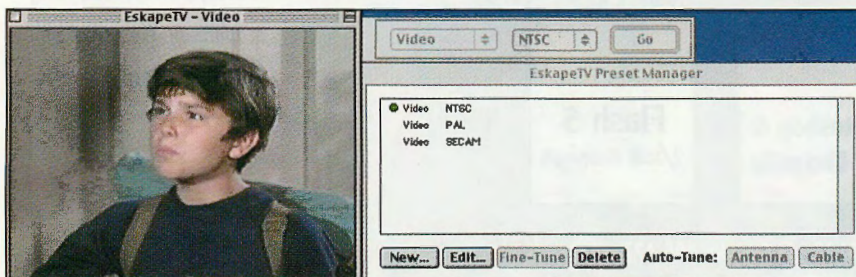
USB concerns aside, how well does it work? Actually, pretty well. MyVideo captures video via a composite or S-Video connection at 320 by 240 pixels and 30 fps, using Motion JPEG compression. Your Mac captures the audio through its audio input. Our captured video played smoothly on our computer monitor and the audio synchronization was perfect. When we played back the video on our TV, the quality

was marginal, but it is after all a 320 by 240 QuickTime movie. We found the quality on par with that of VHS tape recorded in Extended Play mode.

MyVideo also includes a few software apps to do the tasks at hand. EskapeTV Viewer captures the video. VideoView plays it back via your TV. EchoView provides video mirroring to display your Mac desktop on a TV. However, because MyVideo isn't a true hardware composite-video output like those found in current laptop computers, you'll notice a slight lag between what appears on your Mac monitor and what shows up on the TV screen—a result of the on-the-fly compression necessary to mirror your desktop image.

The best deal bundled with MyVideo is Strata VideoShop, a professional video-editing solution. Although a bit antiquated, this program is powerful and normally retails for \$249 (the cost of MyVideo).

Although MyVideo falls into the "not bad" category featurewise, its price tag puts the product in the "not great" category. However, if Strata VideoShop happens to be your editing software of choice, MyVideo's a steal. In the meantime, we hope Eskape Labs builds FireWire or USB 2.0 into future products.—Andrew Tokuda



MyVideo lets you record your favorite TV shows onto your hard drive using its EskapeTV interface.

good news: Decent-quality capture via USB. Free VideoShop software. A decent investment for those without FireWire. **bad news:** High bus-power requirements. Expensive solution for an aging technology.



eMarker

hardware

Company: eMarker.com, a Sony subsidiary

Contact: 415-581-2944, www.emarker.com

Price: \$19.95 (SRP)

Requirements: Power Mac, Mac OS 8.6 or later, 3MB free hard disk space, USB port, Internet connection, Internet Explorer 4.0 or later or Netscape Navigator 4.0 or later

Miller Brewing Company's Blind Date promotion may have music fans screaming, "Who's the band?"—but you've no doubt pondered the same question while listening to the radio. Leave it to Sony to answer it with a svelte, hip-looking device called the eMarker. Working in tandem with the eMarker Web site, it lets you find out the name of any band or song playing on any supported radio station across the country. At first we were skeptical; in the end we were impressed.

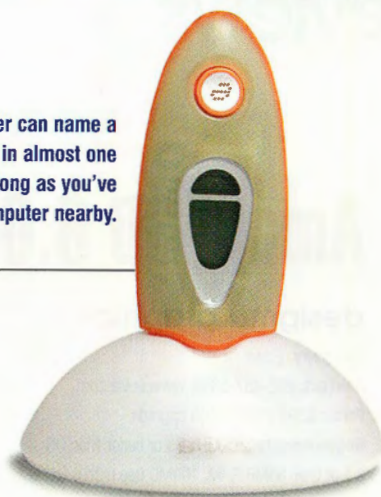
You press its button to mark a song

whenever you hear something you like on the radio—the device marks the time of inquiry. It only holds ten marks, so don't get overzealous. To obtain song info, plug the eMarker into its computer-connected USB dock to launch the Web site.

The eMarker site displays the name of each band and song according to your marks (you'll need to sign up for a free account and set your station preferences before using it). If you're faithful to one radio station, you'll get an accurate list of songs. If you're a station jumper, you may need to flip through the local radio stations listed on the site (via a drop-down menu) to find the correct songs. Our accuracy test scored 100 percent.

Unfortunately, because the eMarker only marks times, we had trouble finding the right song when we couldn't remember what radio station we were listening to when we made a particular mark. Luckily, the site's RealAudio

The eMarker can name a song in almost one note—as long as you've got a computer nearby.



PHOTOGRAPH BY W.B. JONES

snippets refreshed our memory. We also made inadvertent marks by accidentally pressing the all-too-accessible eMarker button as we grabbed the unit.

Though the eMarker site could be better designed to display more than one default radio station, Sony's eMarker is a great device for satisfying your music needs.—Kris Fong

good news: Amazingly accurate. Looks cool. **bad news:** Frustrating for radio-station jumpers. Position of button can lead to inadvertent marks.



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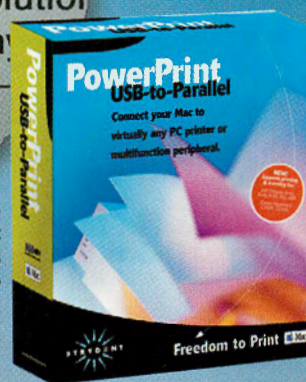
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Amapi 3D 6.0

design & graphics

Company: Eovia

Contact: 858-457-5359, www.eovia.com

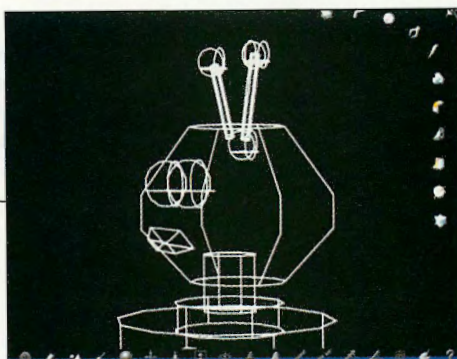
Price: \$399 (SRP), \$199 upgrade

Requirements: 266MHz G3 or faster, Mac OS 8.1 or later, 64MB RAM, 100MB free hard drive space, 24-bit color display (3D graphics accelerator recommended), CD-ROM drive



Find Amapi 3D 4.15 Free Edition and a trial of Amapi 3D 6.0 on The Disc.

There's nothing like discovering a diamond in the rough—if you can overlook its flaws, its potential will satisfy you. Such is the case with Amapi 3D 6.0, a comparatively inexpensive 3D application that boasts many of the same high-end features found in more-expensive packages. Where Amapi 3D differs from its high-end counterparts, such as NewTek LightWave 6.5 (\$2,495, www.newtek.com), is in its focus—it emphasizes *modeling*, tossing in only a few tools and features for



Amapi 3D lets you easily create wire-frame models and render them in the third dimension.



prospective animators. Still, you won't find another package with more-advanced features at this price point.

The first thing we noticed after installation was the unusual interface. Most 3D apps display multiple views of a modeling scene—Amapi 3D starts with just one. Although this seemed like a shortcoming at first, it quickly became a welcome alternative, allowing us to rotate our scene easily with keyboard controls and create custom views in pop-up windows. The innovative tool-bar system floats above the modeling scene, allowing you to cycle through tool sets quickly and easily by

moving the cursor off the right side of the screen—no clicking required. The equally praiseworthy, well-integrated interface delivers precision modeling—we merely pressed the plus (+) key a few times to add points to a sphere and make it smoother.

Among Amapi 3D's strongest features is its inclusion of both polygonal modeling for flat surfaces and shapes, and NURBS (Non-Uniform Rational B-Splines) modeling for curved surfaces and splines. Using both, you can create anything from simple geometric shapes to smooth organic characters with ease. If you have no idea what we're talking about, Eovia's well-written tutorials provide the answers you need to start modeling effectively. With rendering, Amapi cranks out professional results, handling ray tracing, reflections, and lighting effects nicely.

Amapi 3D also presents a lengthy list of modeling tools, including Boolean intersections, bump mapping, polygon mirroring, shape bending and stretching, and a nice extrusion tool for creating complex 3D shapes from simple 2D line drawings. Most tools work well, but there are a few clunkers. The rotate tool, for example—a standard feature for rotating models in 3D space—is so complicated that it's a pain to use.

Our only other disappointment is Amapi's lack of better animation tools, a basic feature. You can compile animations using keyframes and motion paths, and for those without 3D animation skills, this isn't a bad place to start. If you want more-advanced animation features, such as inverse kinematics, you'll have to go elsewhere.

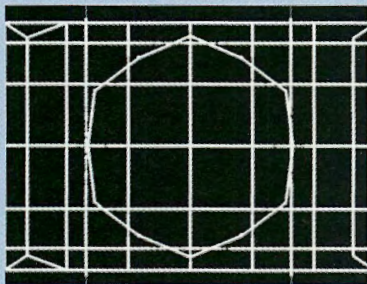
For modeling alone, Amapi 3D 6.0 is an excellent solution. With the easy-to-master interface and long feature list, you'll be living in your own 3D world in a matter of days.

—Patrick Bagatta

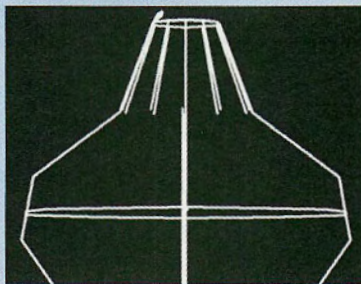
Turn Two Dimensions into Three

One outstanding feature in Amapi 3D is the extrusion tool, which enables you to create 3D shapes from 2D drawings. Here's a quick look at creating a 3D vase from a circle drawing.

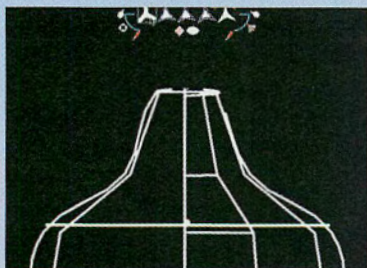
WIREFRAME IMAGES ENHANCED FOR PRINT VISIBILITY



1 Use the pen tool to create a 2D circle.



2 Change the view and then use the extrusion tool to pull up a basic 3D shape from the 2D circle.



3 Use the smoothing tools to create a more organic shape.



4 Add reflections to give the model a ceramic look, then render it out.

good news: Sleek interface.

High-end features. Low-end price.

bad news: Limited animation features. Some quirky tool controls.



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After Effects 5

multimedia

Company: Adobe

Contact: 800-833-6687, www.adobe.com

Price: \$649 (SRP), \$199 upgrade, \$1,499 Production Bundle

Requirements: G3 or faster, Mac OS 9.0.4 or later, 64MB RAM, 120MB free hard disk space, QuickTime 4.1.2 or later, CD-ROM drive

Recommended: Multiprocessor G4, 128MB RAM, 1GB free hard disk space, 24-bit color display adapter

You've seen its deeds—many of the attention-grabbing, fly-by graphics that open just about every

television news program and sports show were created with After Effects, the industry's leading 2D motion-graphics, visual effects, and compositing software. And now it's expanding—with version 5.0, After Effects is now a major player in the world of 3D animation. Its most notable new feature—3D support for layer motions—gives artists the ability to move and rotate layers along the Z-axis, with realistic overlap, shadowing, and motion blur. Add to that hierarchical layer relationships, Macromedia Flash file export, and a slew of welcome minor improvements, and you've got a winning upgrade.

Two versions are available: a standard package (reviewed here) and a Production Bundle that includes pro-level plug-ins and a more enhanced app (see "Go Pro" for a closer look at the Production Bundle). As a desktop compositing program, After Effects is unmatched, enabling you to quickly assemble and animate any number of QuickTime movie and still-image layers, with total control of alpha channel parameters. By nesting composites, or *comps*, you can build complex interrelations between layers and effects, using the most intelligently designed timeline interface of any 2D or 3D motion graphics program.

The new 3D Layer tools got our creative juices flowing. Click the Timeline's 3D switch to add a third axis of movement to any layer. Once we got the hang of the complex 3D movements and camera views, we made layers appear to recede into space and pitch, roll, and yaw as if they were in the real world. Keep in mind that you are still only manipulating a flat plane—akin to rotating a photograph—so a true 3D volumetric look isn't possible.



After Effects 5 adds new 3D features to its already unbeatable effects and compositing tools.

But what you *can* do is impressive. Adobe has done a particularly good job of implementing 3D perspective effects such as shadows, lights, and specularity (mirror-like reflection properties). For example, 3D layers can cast shadows on other 3D layers as they fly by each other, with proper perspective.

Another big improvement is the inclusion of hierarchical layers. You can link layers in parent-child relationships and animate them, with the child layer inheriting all of the transformations (except opacity) applied to the parent. In other words, moving the parent layer moves the child layer in the same manner; moving the child layer, however, does not move the parent. Child layers can be parents to other layers, too, with no limit to the hierarchy you can build.

We were delighted to find that AE5 includes an expressions language (something we asked for in our previous review). Based on JavaScript 1.2, it allows

you to create elaborate combinations of procedural animations without the use of (or in addition to) keyframing. Plus, you don't have to be a JavaScript master to use this feature; you can assemble an expression by picking elements from the timeline or by choosing terms from a language elements menu. Expressions are similar to parenting, in that they both can link motion or other values between layers, but expressions can also link different variables in ways that parenting can't. For example, you can make a rotation motion in one layer cause a color change in another layer—like a dial turning a light from red to green.

AE's masking tools have always been one of its strongest features. You can create up to 128 named masks on one layer, import masks from Photoshop or Illustrator, and make masks interact via Boolean operations. With AE5, you can now create masks on the fly in the Comp window, assign colors to

Go Pro

Some of After Effects 5.0's new features ship only with the \$1,499 Production Bundle version. For twice the price, you get some very impressive tech. Here are some of the most important additional features:

- Support for 16-bits-per-channel color allows for perfect color matching between CG and film.
- Vector Paint, which allows you to paint directly on a layer. Good for paint-outs and fix-ups in 3D renders.
- Motion Tracker, for synchronizing the movement of one layer to another.

- Enhanced 3D Channel effects, notably Depth of Field Blur and 3D Fog.
- Superior keying and matting tools—Matte Choking, Inner/Outer Key, Color Difference Key, Linear Color Key, etc.
- Numerous additional effects plug-ins, including Warp, Particle Playground, Fractal Noise, Optics Compensation, Time Distortion, Foam, Caustics (water reflections), and more.
- Motion Math, for creating equations that precisely control keyframed movement.
- Rendering of projects over a network, with no limit to the number of render slaves.



You can now draw masks right in the Comp window, making masking much quicker and more convenient.

masks, and use the Mask Expansion property to feather the mask edge using offsets—previously, we had to use Pinnacle's Commotion (\$995, www.pinnaclesys.com) to get the same result.

As expected, AE5 provides tight integration with other Adobe products. Layered Photoshop files imported as comps come with adjustment layers and layer effects intact, as do layered Illustrator files. Premiere 5 and later projects import as individual layers, with each layer arranged in the appropriate sequence in the Time Layout window. You can now also bring AE5 projects directly into Premiere 6.

After Effects is a Swiss Army knife-like tool for handling motion media conversions—it's the only app of its kind for the Mac. Upon rendering, After Effects conveniently outputs multiple formats of a project in one step, such as a D-1 version for broadcast and a 320 by 240-pixel version for CD-ROM. For video, After Effects supports NTSC, PAL, or SECAM output, with compensation for non-square pixels in some DV formats and 3:2 pulldown for converting NTSC video to motion-picture film. In fact, After Effects' render queue is so well designed, we wish 3D animation programs would emulate it.

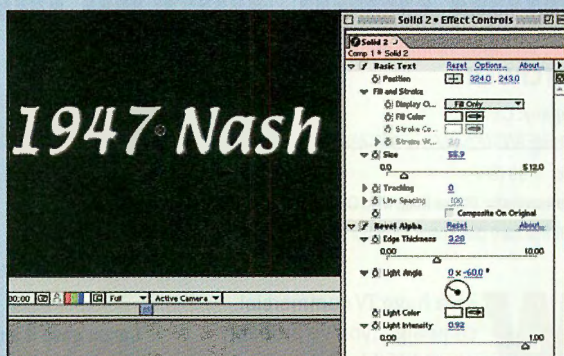
Flash (.swf) output for Web animation is also new; .swf files can include embedded URLs and MP3-encoded audio and generate their own HTML reports. Interestingly, Adobe's addition of this feature calls into question the utility of its own LiveMotion, as After Effects 5 is a far more powerful animation tool.

Still, Adobe left out a few notable things. We can't import some popular 3D model formats, such as .dxf (AutoDesk), .lwo (LightWave), and .obj (AliasWavefront). After Effects 5 is also not significantly faster than its predecessor—it's not fully AltiVec accelerated. And, although After Effects runs fine in Mac OS X Classic, native support won't be available until the next major release.

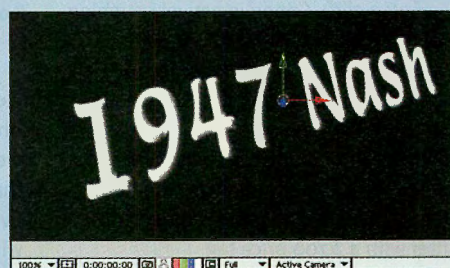
Moving into 3D

After Effects' 3D tools are easy to work with—in fact, full-time 3D programs could learn a lot from how AE handles things. Here's how to make a simple 3D text layer and use a light to cast a shadow on a flat background.

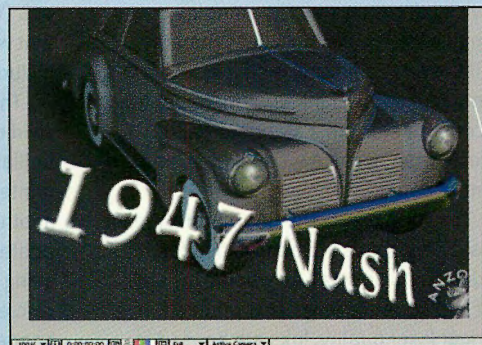
1 Under the File menu, choose New, and then New Project (File>New>New Project) to create a new project, and then make a new comp (Command-N). Under the Layer menu, add a Solid layer (Layer>New Layer>Solid), and then add a Text effect (Effect>Text>Basic Text).



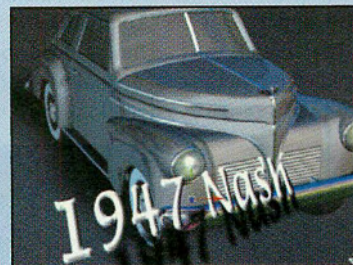
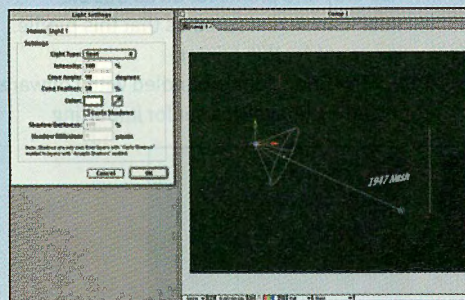
2 In the Timeline, click the switch for 3D mode. In the Comp window, drag the layer around on its 3D axis any way you like. The Active Camera pop-up at the bottom of the Comp window lets you choose front, side, top, or bottom views to aid positioning.



3 Add a background image by dragging an image file first into the Project window and then into the Comp window to create a new layer. Switch this background layer to 3D mode but leave it as is. In a sense, you want to keep your background image in a 2D perspective, but allow the layer to accept 3D shadows.



4 Add a spotlight from the Layers menu (Layers>New>Light), and direct the light at the layers. Double-click the light's icon in the timeline to bring up the Light Info box. Enable shadows and then edit the light settings to your liking.



The final image.

If you're a longtime After Effects user, the new 3D tools and Flash export make the upgrade worthwhile. If you're just getting started in motion graphics for video or film, After Effects 5 is an essential investment. —Steve and Raf Anzovin

good news: 3D motion. Hierarchical layers. Expressions. Flash output.
bad news: Doesn't import some 3D objects. Z-buffer problems. No native Mac OS X support.



S600 Color Bubble Jet

hardware

Company: Canon

Contact: 800-652-2666 or 516-488-6700, www.usa.canon.com

Price: \$199 (SRP)

Requirements: Power Mac, Mac OS 8.1 and later, 10MB RAM, 30MB free hard disk space, USB port

With a huge TV commercial campaign (you've probably caught sight of the woman diving off a cliff), Canon is actively pushing its S600 Color Bubble Jet printer to the American small office/home office (SOHO) market, after introducing it to Europe and Japan. However, the diver might just as well take this printer along with her. For what it offers—and its performance—the S600 Color Bubble Jet is no more than a \$100 printer with a \$200 price tag.

The 2,400-by-1,200-dpi, four-color device prints very quietly, pumping out a mouselike 39 decibels (less than the noise level in a library), and it works fast compared to other inkjets. The paper tray accommodates most standard paper sizes—letter, legal, A4, envelopes, and banner paper.

The good news: The S600 prints great-quality text that's incredibly crisp for an inkjet. Fonts as small as 3 points printed out legibly, while larger text printed out at near laser quality. Inks are housed in four separate tanks, which you replace individually as needed, avoiding waste. The S600 prints swiftly, outputting a 1,536-by-1,024-dpi photo in less than a minute and a half, and it's Mac OS X compatible.

Then there's the bad news—the S600's speed comes at the cost of quality. Photo quality is decent if you don't look too

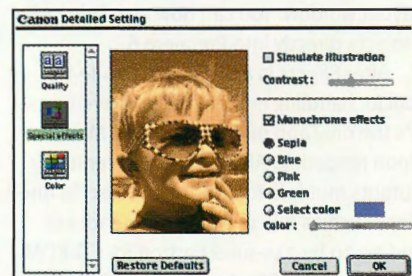
Canon gave it a good college try with the S600, but for what it offers, it's overpriced.

closely. At first glance, a high-resolution photo printed on glossy photo paper looked clear, but on closer examination we noticed that some of the fine detail was missing. Even when we printed in superfine mode, wispy hair strands blended together and skin imperfections appeared airbrushed out. (You could see this as a plus, except that we didn't ask for it.) And what, no included USB cable?

The S600 tended to print expanses of vivid color too dark. For example, the brilliant blue sky in our photo of two skiers printed out a darker twilight blue. In another picture, a sparkling silver chain printed out tarnished and dull. We tried using Apple's ColorSync to prevent the color discrepancy, but the same problems happened even after we selected the printer's included BJ Color Printer Profile 1999. The current but misleading profile name gives the impression that Canon has only one profile for all its Bubble Jets—Canon reassured us that this profile is current for this printer.

The S600 comes bundled with software, including ImageBrowser for importing

pictures from a digital camera and quick viewing, and PhotoStitch for creating panoramas by blending photos together. However, the included software seems better suited to a digital camera bundle than to a printer package.

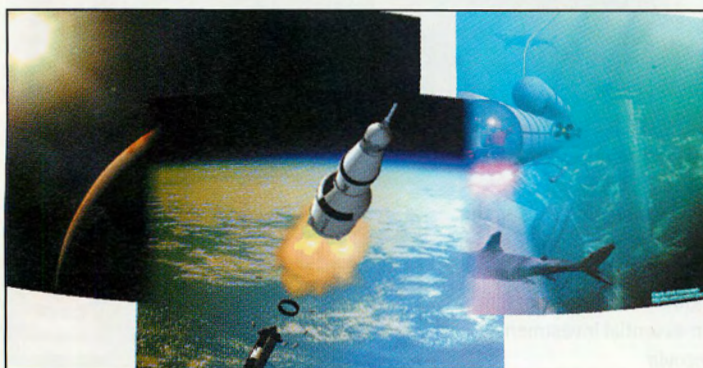


The printer driver includes a few embellishments, including this monochrome effect.

While the printer driver includes a power-saving auto-off feature and color effects (such as monochrome conversion), it's missing one crucial function—a way to monitor the ink levels on an ongoing basis. The print monitor application only informs you when an ink tank is running very low. Canon recommends that you eyeball the ink cartridges, but this method could leave you ink-less in the middle of a print job because the printer didn't give you enough warning.

With so many comparable printers vying for our attention, the Canon S600 Color Bubble Jet printer, with its mediocre color printing, seems like an overpriced low-end machine.

—Mark D. Shuchat-Marx



The bundled PhotoStitch can create interesting image panoramas or montages.

good news: Good text quality. Fast printing.
bad news: Overpriced. Mediocre color-print detail. No USB cable.



LaCie FireWire/ USB CD-RW



PHOTOGRAPH BY W. B. JONES

hardware

Company: LaCie

Contact: 800-288-9919, www.lacie.com

Price: \$299 (SRP)

Requirements: Power Mac, Mac OS 8.6 or later, 40MB free hard disk space, Apple FireWire 2.3.3 or later (for FireWire use), Apple USB 1.3.5 or later (for USB use), USB or FireWire port

Even though Apple has decided (finally!) to outfit most of its new Macs with CD-RW drives, the rest of us won't be able to create our own CDs without a little outside investment first. If you've got the cash and a need for speed, LaCie's new 16X write/10X rewrite/40X read CD-RW is an easy-to-use, reliable drive that works even with iTunes.

Burn, baby, burn! LaCie's USB/FireWire CD-RW drive makes it easy to create your own CDs.

The drive provides both FireWire and USB ports (plus the respective cables), has stereo RCA jacks, and bundles Roxio's Toast software. Setup is easy—just connect the drive to your Mac, install the software, restart, and you're ready to burn. The device includes a power cord, which you'll need since it won't run on bus power.

The burning process is smooth and dependable, thanks to its Burn Proof technology. After quickly burning more than a dozen CDs, we didn't have to relegate any of them to the role of makeshift coaster. Although LaCie includes Toast 4.12, both Toast Titanium 5.0.1 and Apple's iTunes work just fine with the drive.

The manual is a touch sketchy at times. For example, it doesn't mention the audio jacks at all. Also, while the drive's deep-blue casing is attractive, its faceplate is ugly old beige. However, these don't detract from the drive's quality or speed. In all, the LaCie FireWire/USB CD-RW drive is a very good choice for making your own CDs with ease.

—Mark D. Shuchat-Marx

good news: Dependable burning. FireWire and USB options. Compatible with iTunes.
bad news: Manual a bit sketchy. Beige faceplate ruins blue aesthetic.



Introduce

the **ONLY** USB KVM with **HotKey control** and **OSD(On Screen Display)** via **USB Keyboard & Mouse**



MODEL: GCS124U

MiniView™ II USB KVM with OSD

Stone Studio

design & graphics

Company: Stone Design

Contact: 505-345-3800, www.stone.com

Price: \$299 (SRP)

Requirements: G3 or faster, Mac OS X or later, 128MB RAM, 40MB free hard disk space

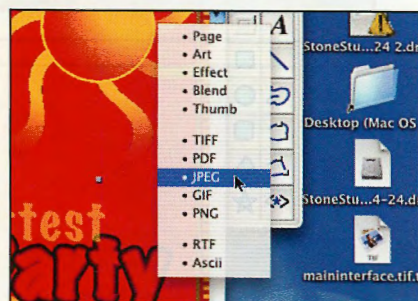
Create provides page-layout features and robust vector-drawing tools for designing brochures, invitations, and multipage documents.



Find a Stone Studio 4/24 demo on The Disc.

In a David-versus-Goliath scenario, a small software company, Stone Design, beat out Macromedia and Adobe in releasing the first Cocoa (bypassing Carbon) graphics suite, Stone Studio. While not for the high-end graphics market, Stone Studio is a robust set of apps that takes some getting used to but is worth the effort.

The heart of Stone Studio is Create, a Web- and print-layout application with illustration and effects tools. It's surrounded by six other applications: GIFFun, PackUp&Go, SliceAndDice, PhotoToWeb, PStill, and



Our favorite feature in Create—the Image Well lets you apply any of these properties to selected objects.

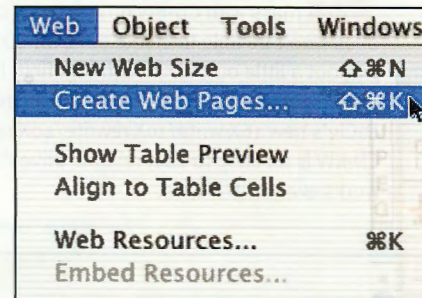
TimeEqualsMoney. All work well together, replacing the need for pricey Web authoring and graphics packages for nonprofessionals. However, integration isn't seamless—you can't import a native Create document into GIFFun, for example. (For a closer look, see "The Companion Apps," below).

Installing Stone Studio was a breeze—we didn't need to reallocate memory no matter how many files we opened. Then again, Mac OS X is the reason why Mac OS 9 users will initially feel frustrated with Create's interface. Bézier and color tools don't work the same way, nor do layer and export options. However, once you're accustomed to the differences, Create becomes easy.

Create comes with robust tools for shapes and drawing, basic text formatting, and effects. Save a custom style via the Image Well and drag the saved effect into the Library Resources palette for later use.

The Image Well, a pop-up menu containing file types (TIFF, PDF, JPEG, GIF, PNG) and object properties (Page, Blend, Effect, Thumbnail), is Create's best feature,

allowing you to export files via drag and drop. For example, you can design art, select JPEG from the Image Well, and drag the word *JPEG* from the pop-up menu onto your Desktop to export the art to a JPEG.



Take any simply laid-out document and create a Web page from it using the Web menu.

Create contains plenty of page-layout features to create master pages, lock down crucial elements (such as folios, backgrounds, and recurring items) to prevent design shifts as you work, and output documents to PDF for high-quality printing. You can also convert documents into Web pages and add rollovers and animation with GIFFun and SliceAndDice. However, you have limited control—the simple table-creation features can't handle much nesting.

Alas, the Bézier tools and some features in the Image Well are complex, and the cursory online help doesn't do much to decipher them, making use difficult. Also, Mac OS X requires that files have extensions tagged on the end, yet Create won't add them—you have to do so yourself.

While Stone Studio won't replace Adobe's graphics suite, it does provide many of the same tools at a fraction of the cost.—Narasu Rebbapragada



good news: Cocoa app. Great value.
bad news: Interface initially confusing. Cursory online help.

The Companion Apps

You can buy Create for \$149; for \$299, you get the following apps as well (you can also purchase each separately):

PhotoToWeb, \$69 Puts photos and graphics on the Web and comes with basic crop, rotate, and scale tools.

SliceAndDice, \$49 Works like Adobe's ImageReady to create navigation bars, JavaScript rollovers, and image slices (with attached URLs).

TimeEqualsMoney, \$49 Tracks work and generates invoices.

PStill, \$69 Converts FreeHand, Illustrator, and other EPS files to PDF format.



We're slicing up sunshine, oh yeah, and don't it feel good?

GIFFun, free Creates animated GIFs.

PackUp&Go, \$15 Compresses and decompresses files.

FireWire 6-Port Hub

From BELKIN

The Next

technology, beauty and, well, speed.

Intrinsic cable management meets compact symmetry and graceful lines. An arc of rear ports flows cables to the computer—function meets form. For all its awesome capabilities, such as a docking ring and 480Mbps transfer speed, you'll love what this hub does for your workspace. At Belkin, we're innovating to make the hottest interface the coolest.

Wave in Intelligent Style—

compact symmetry, extendable

BELKIN

belkin.com

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FireWire is a registered trademark of Apple Computer, Inc. registered in the United States and other countries, used under license. 21AD364-MA-FB

CineStream 3

multimedia

Company: Media 100

Contact: 800-922-3220, www.media100.com

Price: \$499 (SRP)

Requirements: G3 or faster, Mac OS 8.6 or later, 128MB RAM, 30MB free hard disk space, hard disk drive capable of 5-Mbps sustained transfer, FireWire port, CD-ROM drive

CineStream delivers the power of a professional editing suite at half Final Cut Pro's cost.

Addicted to digital video but feeling artistically repressed by iMovie? Media 100's CineStream 3 is a big leap over Apple's DV editor and offers a laundry list of high-end features at half the cost of Apple's Final Cut Pro (\$999, www.apple.com). Though this version does have its weak spots, it's certainly a far cry from the program's humble beginnings.

CineStream started life as EditDV from Digital Origin. In those days Final Cut Pro and Adobe Premiere surpassed it. Now under Media 100's watchful eye, the newly named CineStream does a great job of playing catch-up, transforming itself from a once barely functional product into a serious video editor.

CineStream features many major improvements over EditDV. For one, it can handle more than 2GB of data at a time (a limit set by the Mac OS), making it possible to capture data from an entire DV tape in one pass. You can also automatically capture discrete shots as clips in the bin, using

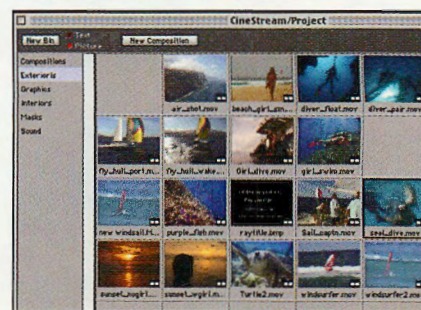
built-in scene detection if you prefer to capture data scene by scene. Other improvements include the new history palette, which makes it easy to jump back and forth between different editing stages, and an astounding 1,000 levels of undo.

The new composition features are a great addition. In a nutshell, a composition is just an edited sequence—slap three clips together and you have a composition. The new features give you the ability to use an existing composition within another. For example, you can edit complex sequences one at a time, save them as compositions, and then assemble them all to create a final project, making it easy to work with alternate sequences for, say, three different endings to a movie.

The Event Stream technology is the most interesting new feature. It allows you to create clickable hot spots within a video sequence or clip by simply dragging and dropping filters. A hot spot can link to a URL or another movie, and you can size it so it covers only part of the screen. Most

important, you can set up hot spots as keyframes to track a moving object.

CineStream also includes the fundamentals, such as batch capture, time-code capture, three-point editing, unlimited video layers, alpha channels, rubber-band audio-level settings, 100 layers of audio, audio panning, slip-and-slide editing, and the ability to export your movies as QuickTime, Windows Media, or RealMedia or output them directly to tape. In our testing, CineStream was extremely stable, and its features worked as advertised.

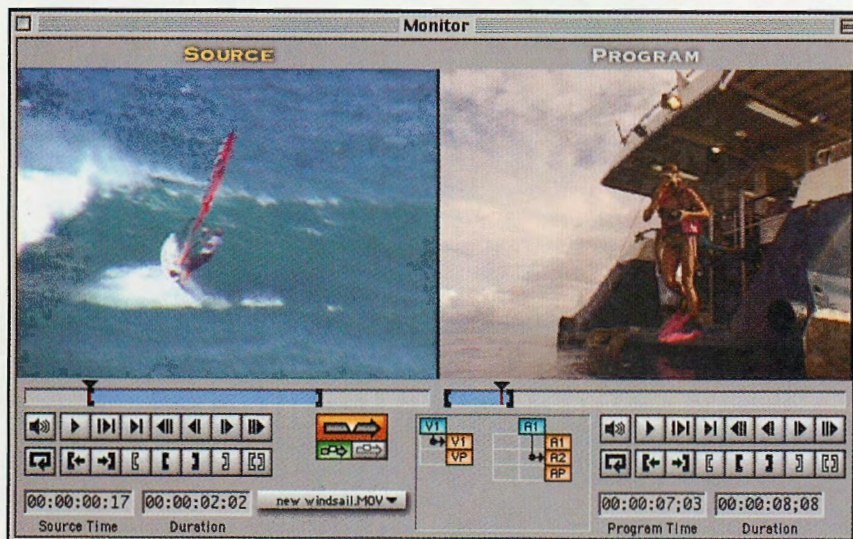


Bins make organizing clips and editing compositions easy. You can even view clips as thumbnails or detailed text descriptions.

There are a few drawbacks. CineStream doesn't support analog-video capture, and offers barely any audio filters for sound sweetening. Rollover-tool help—a standard feature in most applications that displays the tool name—would have been very helpful, but is conspicuously absent.

If you need more DV-editing power than iMovie offers, you don't want to spend a fortune, and you don't need analog-capture or compositing features, CineStream is a rock-solid DV editor at a very reasonable price.—Rick Sanchez

good news: 1,000 levels of undo. Event Stream technology. Enhanced composition features. **bad news:** No analog-capture support. No rollover-tool help. Weak audio support.



The Monitor window includes a patch bay for assigning video and audio tracks, a full complement of editing commands, and direct access to any point in your program.

If this is Norton™...

This is TechTool Pro...



Nothing can ruin your day faster than a broken computer. And while Macintosh is one of the most reliable computers in the world, sometimes things can go wrong. That's why we invented TechTool Pro. TechTool Pro is the super-utility that can find and isolate almost any problem on your computer. No other utility in the world comes even close to covering as many aspects of your Macintosh as TechTool Pro.

But diagnosing computer problems is only half the battle. Besides repairing drives, recovering data and checking the health of your Macintosh components, TechTool Pro can now help protect you against virus problems and software conflicts. TechTool Pro can also keep your Mac running at its peak between problems. The program optimizes your disk drive to make your computer run faster and more efficiently. Our RAM panel even allows you to see

the inner configuration of your memory without opening your computer case.

Do all these features make TechTool Pro complicated to use? Not at all. The Multitester feature allows you to give your computer a full checkup with one click of your mouse. TechTool Pro even creates graphic, easy-to-read and understand reports. Now you can know the state of your computer without having a degree in computer science.

Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting utility available for your computer. Why would you settle for anything less?



Micromat Inc.
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707-566-3831

FAX: 707-566-3871
info@micromat.com
www.micromat.com

See us at Macworld Expo,
Booth #1337

Forget the one-hour photo labs—the Coolscan will scan your negatives and slides beautifully.

Nikon Coolscan IV ED

hardware

Company: Nikon

Contact: 800-645-6687, www.nikonusa.com

Price: \$895 (SRP)

Requirements: G3 or faster, Mac OS 8.6 or later, 32MB RAM, 20MB free hard disk space, VGA-resolution monitor, 16-bit color, USB port, CD-ROM drive

If you're a photography buff, you've no doubt amassed a hefty collection of film negatives or slides that you've slowly neglected over time—especially if you've succumbed to the allure of digital cameras. If you're looking to put your slides and negatives to use in the modern world, the Nikon Coolscan IV ED film scanner will digitize your images and deliver a quality output previously found only in more expensive devices.

Still, the Coolscan is far from cheap; at \$895, it isn't for casual users. But for the serious photographer or anyone who needs detailed, high-res digital files from scanned film, the Coolscan delivers. Plus it can make your pictures look better, thanks to the built-in Digital ICE³ technology (see "ICE, ICE, Baby..." below), which performs automatic enhancements that are normally time consuming—if not impossible to achieve—in either a darkroom or Photoshop.

The USB scanner boasts impressive specs: Nikkor ED optics, 2,900-dpi optical

resolution, 36-bit color, 3.6 optical density, and an extensive color-management system. The resolution is beefy enough to produce 60MB files and 15 by 22 prints without upsampling, depending on your output device and the quality of your slide or negative.

Equally impressive is the included scanning software, Nikon Scan 3.0. The interface, which you can use as a stand-alone application or an image-editing plug-in, offers an arsenal of imaging tools that rival Photoshop's. And you can make adjustments *before* the final scan, negating time-consuming corrections after scanning.

The software interface is logically organized to lead you through the scanning process, and it supports positive, black-and-white or color negative, and Kodachrome film types. It also features a wealth of image-tweaking tools: layout, crop, curves, color balance, LCH editor (luminosity, chroma, and hue), unsharp mask, Digital ICE³ (combining ICE, ROC, and GEM), Analog Gain (which lets you directly alter the exposure using the

colored elements in the scanner's light source), and Scanner Extras (for manually focusing the scanner, adjusting pixel depth, and recalibrating the scanner).

Although Nikon Scan worked wonderfully as a stand-alone application, we had serious freezing and crashing problems when using the plug-in version with Photoshop 6.0. We rarely needed to use Photoshop for touch-ups, but we hope the plug-in's performance is optimized in updates.

While scanning speeds are respectable, the scanner lollygags at times. As with the software quirks, this is a drawback we can live with. If scanning speed is crucial to your livelihood, check out Nikon's higher-end FireWire scanners. If not, the Nikon Coolscan IV ED is a mighty impressive machine.

—Michael Shapiro

good news: Excellent scan quality. Extensive software interface. Über-impressive Digital ICE³ technology.
bad news: Plug-in module slightly buggy. USB interface a little slow.



freakin' awesome!

ICE, ICE, Baby...

Digital ICE (Image Correction and Enhancement) is a scanning technology developed by Applied Science Fiction, and has been featured in other scanners along with Digital ROC (Restoration

of Color) and Digital GEM (Grain Equalization Management). Nikon's newest Coolscan models are the first to feature all three tools, referred to collectively as Digital ICE³.

Digital ICE aids in eliminating surface

imperfections (such as scratches) on film. ROC restores color to faded images, and GEM minimizes film grain. All three work their magic automatically—no fussing required!



Before: Sunlight on the water is rendered nicely from slide to scan, but spoiled by smudges and dirt in the sky.

After: With Digital ICE (Fine setting) applied, the sky miraculously clears.



Xtools

utilities

Company: Tenon

Contact: 800-662-2410 or 805-963-6983,

www.tenon.com

Price: \$199 (SRP)

Requirements: Mac OS X, 128MB RAM

When discussions of using your Mac turn to using your Mac to run X Window programs, you know you've entered flavor country—Unix land, that is. If you're bored with your usual Mac app fare, Xtools—an X Window server from Tenon—offers a painless way to run X Window programs (Unix-based apps) on Mac OS X. Based on the freely downloadable XFree86 software (www.xfree86.org), Xtools also offers no-fuss installation and configuration.

Xtools is currently only available by download (a CD-ROM distributed version is in the works). Installation is easy—especially when compared to installing XFree86. Just mount the disk image, double-click the installer and let your Mac

What is an X Window Server, Anyway?

Aqua isn't the only way to draw graphical user interface items on your screen. An X Window server is software developed years ago that lets Unix programs draw windows, menus, and so on. By using it, you can bypass Aqua altogether or run X Windows alongside Aqua, which is similar to having a Unix-flavored Classic environment. Why would you want to? Here are a couple of reasons:

More Programs By running an X Window server on your Mac OS X machine, you suddenly have access to tons of X Window-based software.

Remote Execution An X Window server is an actual server. If you're running an X Window client on another Mac on the same network, you can connect to the X Window server Mac and run programs from it across the network.



The GIMP, a powerful, freely available, Linux-friendly image editor, now comes to Mac OS X with Xtools.

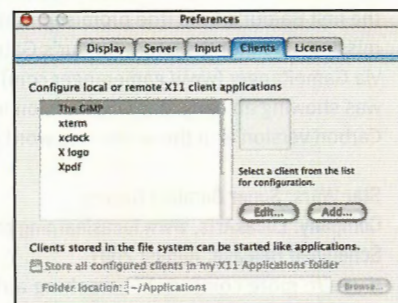
take care of the rest—you'll be left with an Xtools application when the dust settles.

After double-clicking to launch, the program presents you with a menu full of pre-installed X Window applications such as Xeyes (a pair of eyes that watch your cursor), Xbiff (an email notifier), and Xterm (an X11 terminal program)—but other than Xterm, the rest aren't terribly useful. Therefore, you'll want to hunt down other X Window apps (check out www.darwininfo.org and www.macgimp.com). In our testing, X Window programs worked well with Xtools—including OpenGL acceleration—and we ran programs locally and remotely on a client machine on the same network.

Adding new programs to Xtools' menu of applications and configuring them is easy. The Preferences window makes everything dead simple—you can choose between rooted mode (the X Window server spans the entire desktop) and rootless mode (X windows exist side-by-side with Aqua windows) in a few clicks.

On the dark side, Xtools has an annoying habit of crashing unexpectedly and taking down all of your X Window programs with it—kind of like having your Classic layer go down. If you're banking on stability, you won't get it with Xtools. Hopefully, Tenon will remedy this once Apple stops making frequent revisions to Mac OS X. This shortcoming is even more significant when you consider that XFree86 is just as stable (and unstable) as Xtools,

yet more responsive when you run apps in rootless mode, such as with the GIMP (GNU Image Manipulation Program). To be fair, the instability may be due to problems in the underlying XFree86 libraries, on which Xtools is based.



Adding X applications to the Clients menu is as easy as clicking the Add button and then typing the path to the client.

If you need an X Window server, don't want to spend time mucking about with installation and configuration, and have the cash, get Xtools. Until Tenon releases a more robust version of Xtools, however, you may be better off spending a few hours downloading and installing XFree86—at least you'll save yourself some scratch.

—David Reynolds

good news: Easiest X Window server out there. Works great in rootless, windowed mode.
bad news: Buggy. Free alternative available. Slow performance.



powerplay

Make way! We've got a bunch of games coming through, so get ready for a productivity drop.

Summer Games

Cool Mac Games Coming Your Way

As usual, the arrival of summer has shifted the Macintosh gaming world into high gear. Most of the major Macintosh gaming companies use a pair of trade shows—the Electronic Entertainment Expo (E3) in April and Macworld Expo in July—to show off their plans for the year to come. After some truly grueling work running about the country playing games (we're used to suffering for our art), we've managed to round up some tantalizing tidbits of what's to come. Here's what we found.—NR

Baldur's Gate II: Shadows of Amn

Company: MacPlay, www.macplay.com

Scheduled Release: Macworld Expo New York

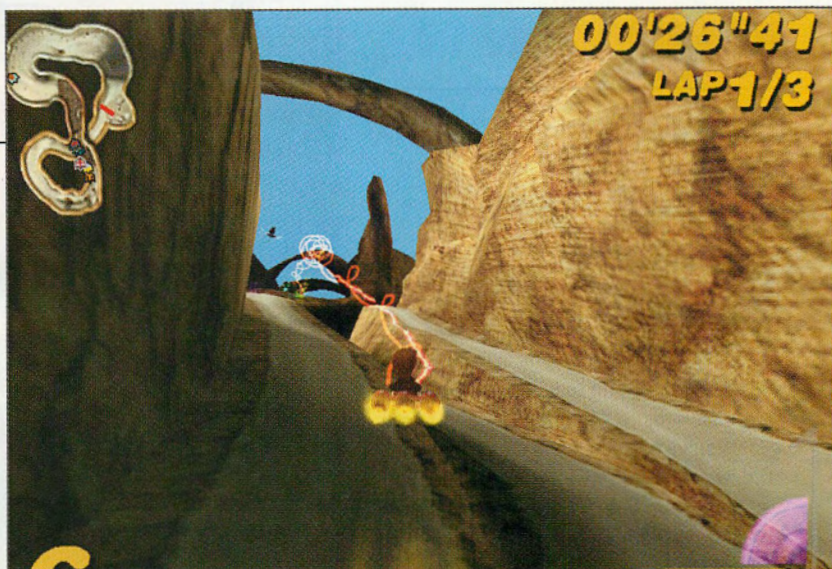
MacPlay will release the continuation of the Baldur's Gate series (Graphic Simulations published the first game) with a higher screen resolution (800 by 600), more characters and spells, and "at least 100 hours of gameplay," according to MacPlay spokesperson Jason Whong. The characters have more depth than those in Baldur's Gate I (although you can import the ones you've already got). The game has a better journal and a way to hide the interface controls. Unlike the first Baldur's Gate (the promised multiplayer version is still missing nine months later), Baldur's Gate II will support multiplayer via GameRanger (www.gameranger.com) right out of the box. Apple was showing an early Mac OS X version in its booth, so we assume a Carbon version is in the works—no word yet on when it might come.

Star Wars: Super Bombad Racing

Company: LucasArts, www.lucaslearning.com

Scheduled Release: August 2001

If you're more comfortable crashing airborne vehicles than working out complicated strategies, LucasArts has the game for



Bombad is evidently a Gungan word that translates roughly to "deeply cool." We're not arguing.

you. Star Wars Super Bombad Racing is similar to Pod Racer (Reviews, Apr/00, p56) but with zanier gameplay and a different game engine.

In this latest *Star Wars* game, caricatures of your favorite characters race their vehicles through nine wild courses. Borrowing from the console world, the game lets you split your screen so you can pit two players (with separate USB controllers) against each other on a single computer.



Rooting for a crash?

Mia: Just in Time

Company: Kutoka Interactive, www.kutoka.com

Scheduled Release: August 2001

Everyone's favorite mouse (no, the other one) is back. This time Mia has to save her house from burning down using time travel and a variety of educational games. Yes, this is a kid's game—but it's fun to play, and it might even melt the heart of the most hardened telefragger.



Better graphics and deeper characters await you in Baldur's Gate II.



Mia may well be the best-rendered edutainment character we've ever seen.



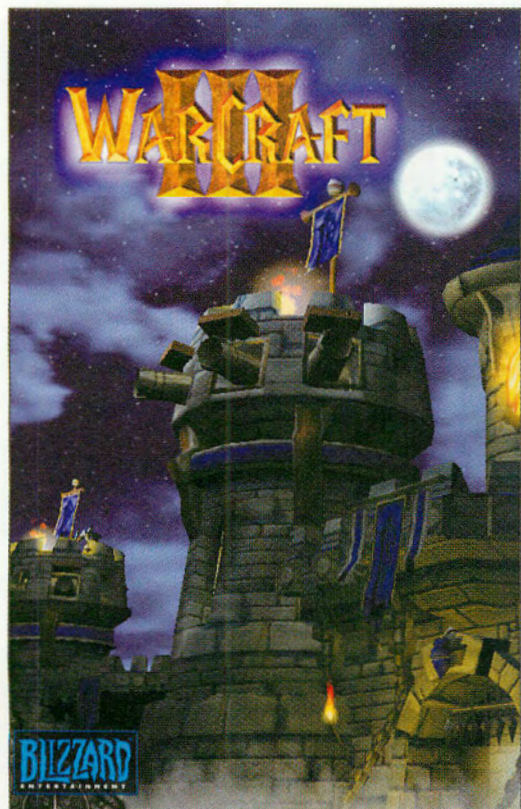
That's right, folks—it's Warcraft III running on Mac OS X. Find your drool bucket on the right.

Warcraft III

Company: **Blizzard Entertainment**, www.blizzard.com

Scheduled Release: **December 2001**

Warcraft III, the next of Blizzard's widely renowned real-time strategy games, is slated to ship at the end of the year. No long Diablo-style wait for this game—Blizzard Entertainment is shooting to release the Mac version on the same day as the PC game. "If it doesn't ship that day [when the PC version ships]," says Beau Yarbrough of Blizzard, "it'll ship the week after." Judging by the screenshots Blizzard sent us, a Mac OS X-native version of Warcraft III is a safe bet.



Keep drooling—this one's for Christmas.



Characters come with their own unique voices, languages, and decision-making capabilities.

Master of Orion III

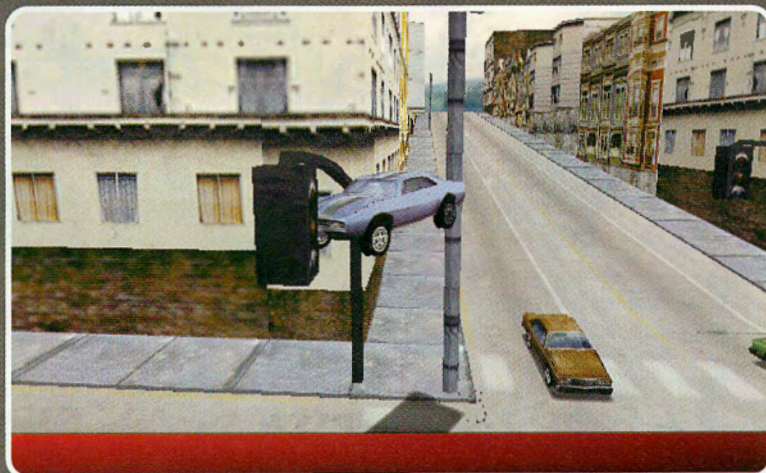
Company: **MacSoft**, www.wizworks.com/macsoft

Scheduled Release: **First quarter, 2002**

MacSoft will release this space-age strategy saga simultaneously for Mac and PC in the first quarter of next year. Master of Orion III improves upon its predecessors with better tactical combat, better ship design, characters who have deeper relationships, better galaxy maps, and more-complex politics. "You can win this game without ever shedding a drop of blood," says Quicksilver's Cory Nelson (the game's developer). With beautiful graphics, great sound, and a Carbonized version expected to come out, Master of Orion III is a game to watch for.

SCREENSHOT OF THE MONTH

Driver seems to be almost uniquely well suited to generating worthy screenshots, and this month is no exception. The artist: Joe Zarate. The game: Driver.



Artist's Statement

Well, so far, so good...

Send your best screenshots to letters@macaddict.com with the subject line "Screenshot of the Month" if you crave fame and glory (or at least fleeting satisfaction upon seeing your screenshot in a magazine).

how to

That radio star's in trouble, from the look of things.

Make an Old-School iMovie

by Cathy Lu



WHAT YOU'LL NEED

- A DV camera or raw video footage
- Apple's iMovie 2 (\$49, Mac OS X version free, www.apple.com/imovie)
- Apple's iMovie 2 Plug-in Pack (free, www.apple.com/imovie)
- Geethree's Slick Transitions & Effects (\$29.95, www.geethree.com)
- Ratchet sound effect (\$6.35, www.sounddogs.com)



With a little help from iMovie, you can make your home movies look as bad as ever!



This stuff's for the pros.



It'll take some effort, but you can do it.



The fundamentals, if you will.



Find the completed *Babies and Barbecues* movie on The Disc.

If you had any semblance of a real (and thus annoying) childhood, then you remember vividly the evil family-vacation movie. You know the one—you're standing in front of some famous landmark, grinning from ear to ear and waving furiously at the camera while Mom or Dad captures it all on 8mm film. Even though DV and nonlinear editing programs like iMovie and Final Cut Pro have vastly improved upon video technology, you can still create old-fashioned movies, complete with dull color, terrible camera work, and screen lint. Why would you want to? Maybe you

want your video to have a certain nostalgic feel. Maybe you're designing the pilot episode for *The Wonder Years 2*. Or maybe you just miss the seventies (don't worry—we won't tell).

In this article, we'll demonstrate how to put together an old-school iMovie, using footage from a backyard barbecue. Luckily, all it takes to start editing your own cheesy movie is a few willing subjects, a lack of creative vision, and some cool plug-ins from Apple and GeeThree. And if you ask us, cheesy is never a bad thing.

Shooting Silly Footage



Gross close-ups lend your movie that authentic badly made feel.



An adult chasing after a baby is a cheesy-movie staple.



This shot of the food table is just the kind of random footage you want.

The charm of your parent's 8mm movies is that they revolve around subjects (aka you) doing stupid things and were filmed with an unsteady hand on the camera. While we're naturals at capturing pretty bad footage, some of you video connoisseurs may need a few tips:

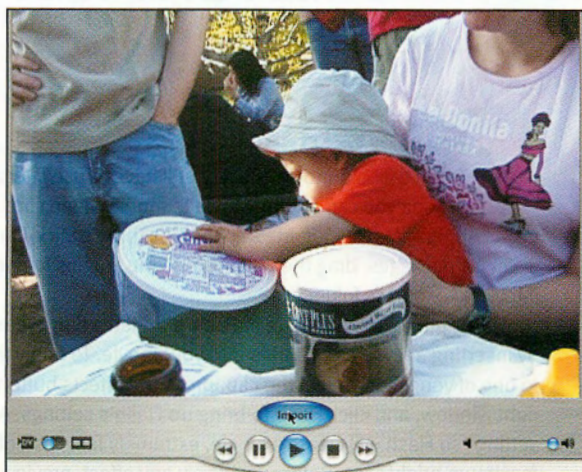
- Drink coffee, don't get enough sleep, or use your left hand—anything that will make your camera work jittery.
- Keep your camera on even as you change angles or locations—that random, in-between footage is priceless.

- Encourage your subjects to behave absurdly—try to get them to wave wildly, blow kisses, and attempt outdated dance moves.
- Include a baby or a pet among your subjects—adopt one if you must. Since they don't actually know they're on film, their antics aren't as self-conscious as an adult's, and provide countless minutes of cutesy video entertainment.
- Shoot holding the camera at weird angles. Turn your camera diagonally occasionally, and don't be afraid to cut off someone's head.

1 Import Your Handiwork

Once you've taken all the video you can stand, it's time to *capture* the footage—that is, bring your shots into the computer so you can alter them. To get started, hook your DV camera to your Mac's FireWire port, open iMovie 2, and click the Play button in the software. Your video footage will start playing directly from your camera. When you see a scene you'd like to capture, click the Import button to tell iMovie to begin saving the video from the camera onto the computer; click Import again when the scene ends to finish saving the scene (don't worry about precision—you can set exactly where you want the scenes to start and end in the next step). Each time you capture a piece of video, it will appear as a *clip* (a video fragment saved on the computer) in the window on the screen's right side.

Just click Import when you want to start capturing footage and click it again when you want to stop.

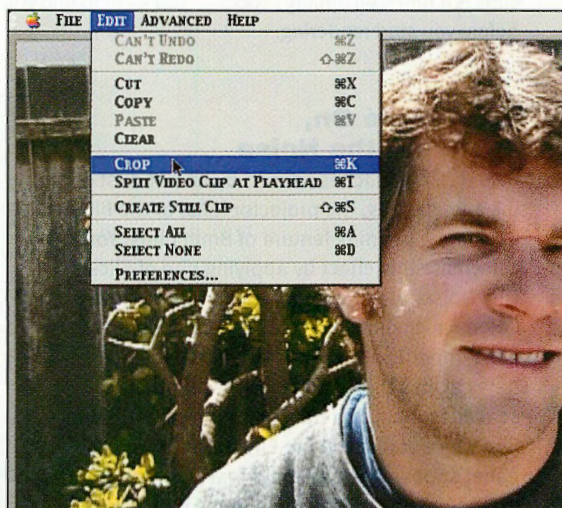


2 Edit Your Clips

In the 8mm days, cutting out unnecessary footage was beyond the abilities of most home filmmakers—so try to preserve as much dull video as possible. That said, there are only so many times you can stand to watch a baby spit up. To crop a clip, select it, then in the main player window (where the video appears), click and drag beneath the scrubber (the bar below the video, showing your position in the clip) to reveal *crop marks* that let you tell the computer exactly where you want the clip to start and end. Move the left marker to the point where you want the clip to begin, then move the right marker to the point where you want the clip to end. When you have the crop marks positioned properly, choose Crop from the Edit menu. Once you're happy with your clips, drag them onto the timeline in the desired playing order.



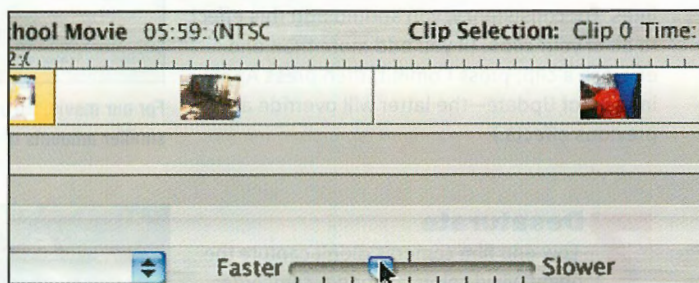
To make the crop marks appear, click and drag beneath the scrubber bar.



Select Crop from the Edit menu when you're sure you've got the footage you want.

3 Crank It Up

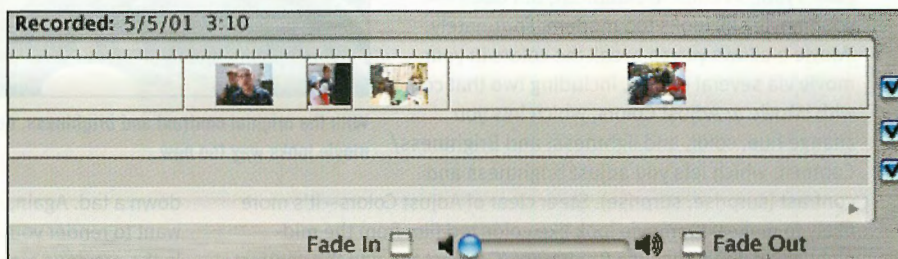
Remember watching films of yourself and wondering why you always seemed to run rather than walk or wave just a little too vehemently? The action sped up because 8mm cameras recorded footage at 18 fps (frames per second), but it often played back (after conversion to videocassette or film) at the standard 30 fps (for video) or 24 fps (for film). This made any movement in the film look unnaturally fast. You can simulate this effect by bumping up the speed of your clips. Just select the clips one by one and move the speed bar at the bottom of the iMovie window one notch to the left, toward Faster. This will make a cat chasing its tail much funnier.



To hasten your movie, move the slider toward Faster.

4 Turn It Down

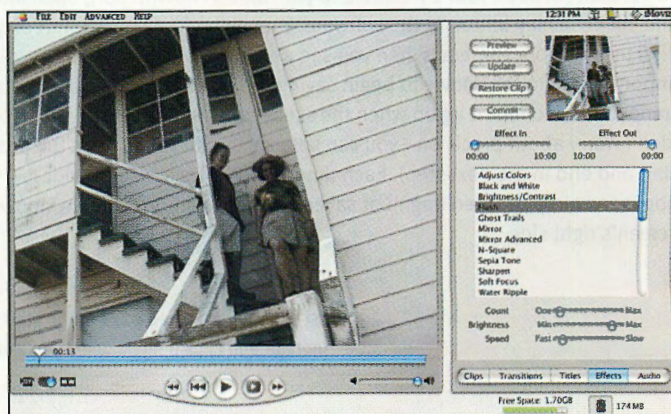
When you speed up your video, you'll also bump up the rate of the audio. If you leave the audio intact, your subjects will sound like Alvin on speed taking hits of helium. Fortunately, most 8mm cameras didn't record sound, so you can just turn it off. Select each clip and adjust the volume slider all the way down (it's bracketed by the Fade In and Fade Out boxes at the bottom of the iMovie window). Move the volume slider all the way to the left before you cause some aural damage.



5 Flash Me, Baby

To get that old-movie effect, you'll have to use *filters*—pieces of code you can add to iMovie to modify video clips. To install Apple's iMovie Plug-in Pack and GeeThree's Slick Transitions & Effects packages, drag the plug-ins into the Plugins folder inside iMovie's Resources folder.

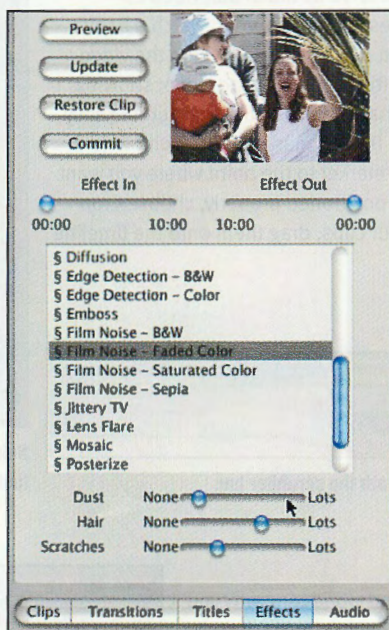
Flash, part of the free Plug-in Pack, simulates film overexposure by inserting a few white flashes into your movie. To apply this effect to one of your clips, select the clip, press the Effects button in the right window, and click Flash to bring up Flash's settings. Adjust the settings so Flash will create a single, extremely fast flash of near-maximum brightness. Before you apply any effect, preview it by pressing the Preview button. This is important because rendering clips is a time-consuming process—you want to find your mistakes before you start rendering.



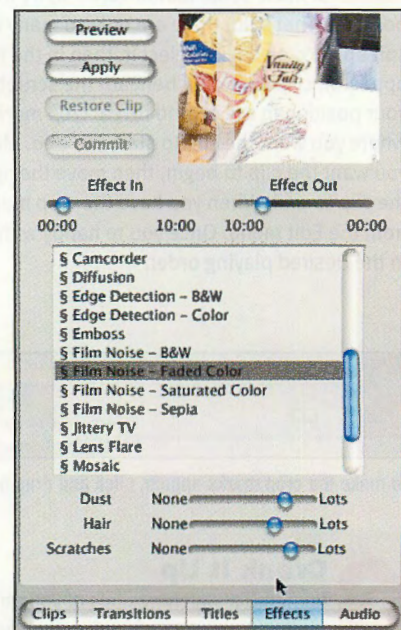
To add to that amateurish look, insert a few bright white flashes.

6 Come On, Feel the Noise

Little glitches caused by hair or dust on the camera lens, the projector lens, or the film itself are a defining feature of 8mm films. You can create this effect by applying one of Slick's Film Noise filters. We chose Film Noise—Faded Color, which dulls the color of your iMovie and adds imperfections—mostly white lines that travel across the screen to represent the scratches, hair, and dust that marred traditional film. Once you select the effect, the settings panel appears (just as it did for Flash); here you can adjust the rate at which these items appear by tweaking the appropriate sliders. In general, feel free to add lots of hair, but be careful with the dust and scratches—both tend to make the filter add thicker and more distracting white lines. For consistency, you should add this effect to all of your clips. (If you add more than one effect to a clip, press Commit, then press Apply instead of Update—the latter will override any previous effects.)



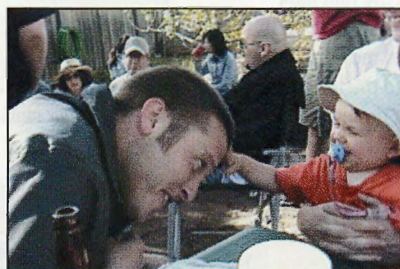
For our movie, we opted for lots of hair and smaller amounts of dust and scratches.



Insert too much dust and too many scratches and you'll end up with an exaggerated effect, as you can see in this preview window.

7 Desaturate

Low-end film cameras didn't capture the bright, vivid colors a modern camcorder can. You've already fixed part of that problem (the Film Noise—Faded Color filter muted the bright colors your DV camera captured), but odds are your movie still looks too modern. Fortunately, iMovie 2 allows you to tweak the colors in your movie via several effects, including two that come with iMovie 2: Adjust Colors, which lets you change hue, color, and lightness; and Brightness/Contrast, which lets you adjust brightness and contrast (surprise, surprise). Steer clear of Adjust Colors—it's more likely to make your movie look like colorized film from the mid-eighties. Instead, just use Brightness/Contrast to bring the contrast



With the original contrast and brightness, our movie looks way too new.



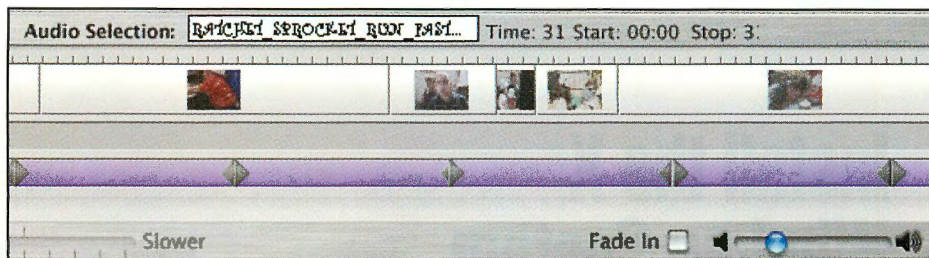
Lowering the contrast makes the colors duller.

down a tad. Again, remember to press Commit, then Apply when you want to render your clip. This preserves the noise effects you added in the previous step.

8 Give the Gift of Sound

Your film won't be nostalgic if it doesn't contain the right audio effect—namely, the sound of film turning in a projector. You can find audio clips in many places (www.sounddog.com is a good source, for example). You can either use the Ratchet sound effect we found on sounddog, or find (or even record!) one of your own.

Once you secure a good projection sound, import it into your movie by choosing Import File from the File menu. If the sound clip you find isn't long enough, import it as many times as you need to run it throughout your movie (just place each new clip right after the last one to make the sound continuous). If the final audio clip stretches beyond the end of your



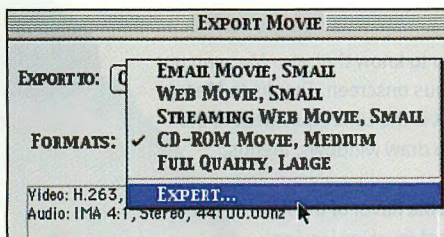
We imported our Ratchet sound effect seven times and lowered the volume so it wouldn't overpower the movie.

video, shorten it by dragging its bar in the timeline, lining it up with the end of the movie. Finally, turn down the volume of each audio clip to a bearable level by adjusting the Volume slider at the bottom of the iMovie window.

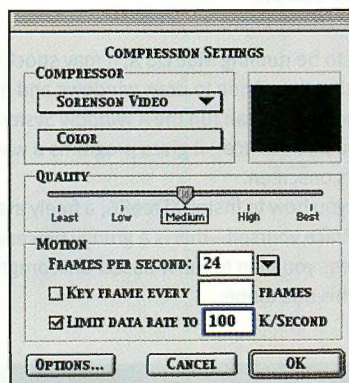
9 Lovin', Squeezin', Compressin'

When you're satisfied with the quality (or lack thereof) of your movie, you'll want to export it. First choose Export Movie from the File menu. In the window that appears, select whether you want to export to camera or to QuickTime. If you choose the latter option, you'll have to specify how to compress the

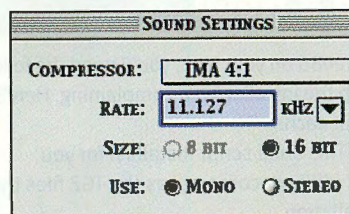
video. Since most of us aren't compression savvy, iMovie lets you choose a distribution medium (for example, email movie or CD-ROM movie), then automatically configures the compression based on your selection. If you want more control, select Expert to bring up another window where you can tweak the image size, compression settings, and audio settings. For our purposes, we finally settled on a 160-by-120-pixel movie at medium quality with a data rate of 100 Kbps and a sound sample rate of 11.127kHz (remember, the only audio is the sound of film sprockets, so you can let audio quality go to pot without destroying the illusion of running a projector). These settings gave us a much slimmer 24.1MB movie that any child of the seventies can appreciate.



Don't be afraid to go beyond the preset compression settings. It's not that scary.



These were our final compression settings: a 160-by-120-pixel movie with Sorenson compression at 24 fps and a data rate of 100 Kbps. For audio we used the IMA 4:1 compressor at 11.127kHz, with 16-bit monophonic sound.



Our final audio settings weren't high quality, but they didn't need to be.

Different Cinematic Styles

While we went for the 8mm film look, the iMovie Plug-in Pack and the Slick plug-ins actually offer a wide variety of effects and transitions. Here are a few pretty weird ones you might enjoy playing with.



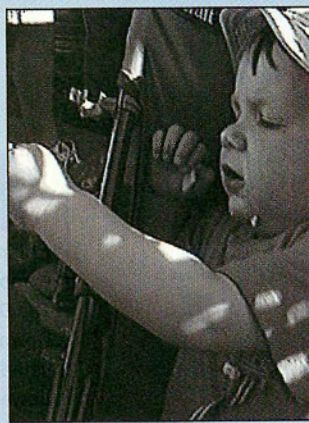
Camcorder (Slick)

Sure, if we were making *Blair Witch 3*.



N-Square (iMovie Plug-in Pack)

OK, so we had some beer—but we weren't *that* drunk.



Edge Detection—B&W (Slick)

We're old school, but we're not ancient.



X-Ray (Slick)

It's just a little too weird and gross for our aesthetic.

Cathy Lu would like to thank her father for inspiring this film.

Install the X Window System

by David Reynolds

WHAT YOU'LL NEED

- Mac OS X (with the Developer Tools installed)
- Basic Terminal knowledge
- XFree86 4.0.2 files (see "Files You'll Need," below)
- XFree86 4.0.3 update

If you happen to be running Mac OS X, it may shock you to know that your Mac can use something other than Aqua to draw windows and menus onscreen. Thanks to Mac OS X's Unix heritage, it can run the *X Window System*. X is the Unix equivalent of the Mac OS graphical user interface—it gives programs a way to draw windows, menus, and mouse cursors onscreen.

Here we show you how to install XFree86, a freely available flavor of the X Window System. Brace yourself—this is a grungy process that involves leaving Aqua entirely. Unless you plan to run X-based Unix programs, you're probably better off leaving this one alone.

If you're willing to set aside Aqua temporarily, the X Window System lets you run more Unix apps.



ILLUSTRATION BY NATHAN JUREVICUS

Files You'll Need

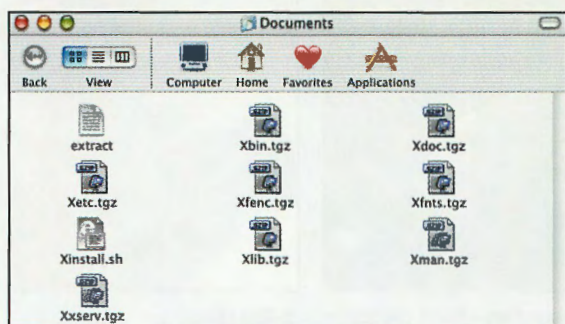
To install XFree86 on your Mac, you'll need the following ten files to keep the installer from complaining. Here's a bit of information about each:

- ☐ **Xinstall.sh** This shell script installs X for you.
- ☐ **extract** This utility decompresses the TGZ files that make up the X installation.
- ☐ **Xbin.tgz-X** Window client programs and run-time libraries.
- ☐ **Xlib.tgz** More X libraries.
- ☐ **Xman.tgz** Help documents (aka manual pages).
- ☐ **Xdoc.tgz** More X Window documentation.
- ☐ **Xfnts.tgz** Fonts for X (yes, it uses different fonts).
- ☐ **Xfenc.tgz** Font-encoding information for X.
- ☐ **Xetc.tgz** Configuration files for X when it runs.
- ☐ **Xxserv.tgz** The actual XFree86 server.

Optional Files

Although you don't actually *need* the following files to install and run XFree86 on your Mac, they are very handy to have around. We recommend downloading them as well:

- ☐ **Xfsrv.tgz-X** X Window font server.
- ☐ **Xnest** A nested X Window server.
- ☐ **Xprog.tgz** Necessary if you want to compile your own X apps.
- ☐ **Xprt.tgz** An X Window print server (useful for printing).
- ☐ **Xvfb.tgz** Lets you test unusual X Window configurations.
- ☐ **Xf100.tgz** Some 100-dpi fonts.
- ☐ **Xflat2.tgz** Some Latin-2 fonts.
- ☐ **Xfsl.tgz** Some Type 1 and Speedo scalable fonts.
- ☐ **Xhtml.tgz-X** Window documentation formatted in HTML.
- ☐ **Xps.tgz-X** Window documentation formatted as PostScript.
- ☐ **Xjdoc.tgz-X** Window documentation in Japanese.



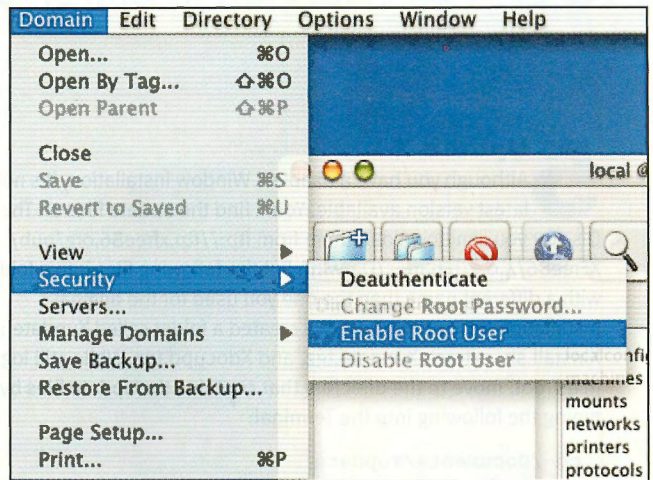
For a basic XFree86 installation, you'll need these ten files. You can download them with the FTP client of your choice, or just copy them from The Disc.

1 Get the X Files

The first thing you'll need to do is get the base XFree86 files. The files you want are precompiled binaries (programmer-speak for the actual programs that make X work), so you don't have to build anything with the compiler—this will save you a ton of time. You can find the files you need on The Disc or at [ftp://ftp.xfree86.org/pub/XFree86/4.0.2/binaries/Darwin](http://ftp.xfree86.org/pub/XFree86/4.0.2/binaries/Darwin). Download the files listed in "Files You'll Need" above, as well as the ones listed in "Optional Files" (unless you're tight on drive space). Whether you download the files (which weigh in at 60MB) or copy them from The Disc, put all of them in an easily accessible folder. We'll assume you created a folder called XFiles in your Documents folder. (Be careful—X's install scripts aren't too bright, so make sure you don't put the files into a folder that has a space in its name, or the script will fail.)

2

Enabling your root user is as simple as choosing Enable Root User from the Security submenu of the Domain menu. Good luck—you're at the edge of the rabbit hole.

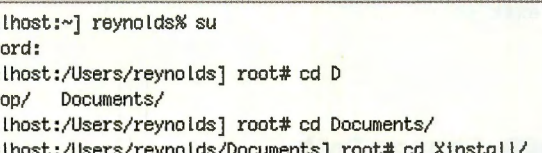


3

Su

```
cd~/Documents/Xfiles
```

```
chmod +x extract
```



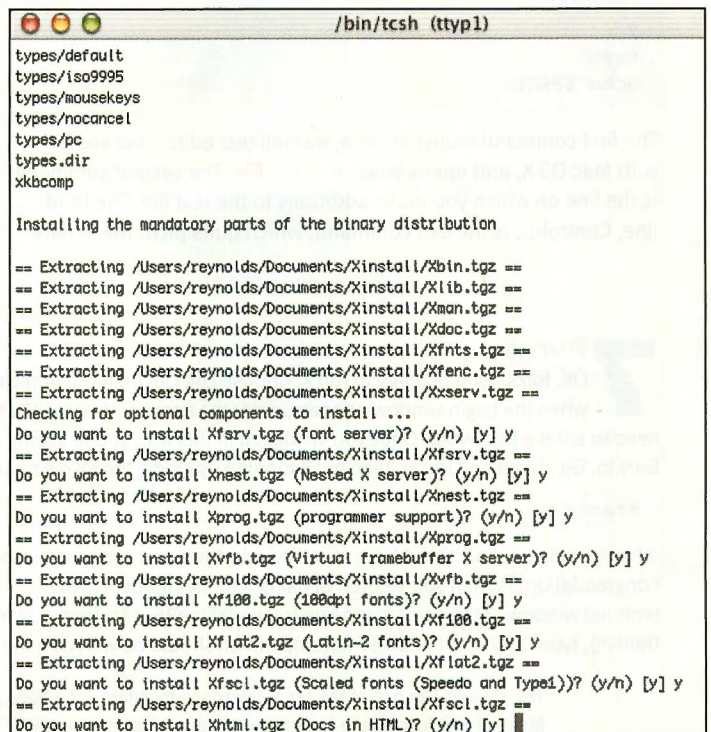
A terminal window titled `/bin/tcsh (tty1)` with three window control buttons (red, yellow, green) in the top-left corner. The terminal displays the following sequence of commands and outputs:

```
[localhost:~] reynolds% su
Password:
[localhost:/Users/reynolds] root# cd D
Desktop/ Documents/
[localhost:/Users/reynolds] root# cd Documents/
[localhost:/Users/reynolds/Documents] root# cd Xinstall/
[localhost:reynolds/Documents/Xinstall] root# chmod +x extract
[localhost:reynolds/Documents/Xinstall] root#
```

4

```
sh Xinstall.sh
```

During installation, the script will ask which optional components you want to install. Go ahead, install them all—you never know when you'll need that virtual frame buffer.



5 Update X

Although you have a usable X Window installation, it's not the latest version available. You'll find the update files on The Disc (or you can download them from <ftp://ftp.xfree86.org/pub/XFree86/4.0.3/binaries/Darwin>). Put the following files into a folder with a different name than the one you used for the original installation (for our example, we created a folder called Xupdate): Xinstall.sh, extract, Xupdate.tgz, and Xdocupd.tgz. While still logged in as root, move to the directory that contains the update files by typing the following into the Terminal:

```
cd~/Documents/Xupdate
```

Next, enter the following commands (again into the Terminal):

```
chmod +x extract
sh Xinstall.sh
exit
```

6 Change Path

You're almost there, but you still need to add to your command path the directory that holds all the X Window applications—otherwise, you'd have to type an amazingly long path name to fire up X apps (or even X itself). To change your command path, you'll add a line to an invisible text file in your home directory named `.cshrc`. Type the following commands in the Terminal (press Return between lines; also, for the third line, hold down the Control key and press `x`, don't literally type `control-x`).

```
pico.cshrc
setenv PATH {${PATH}}:/usr/X11R6/bin
Control-x
y
tcsh
echo $PATH
```

The first command launches pico, a small text editor that comes with Mac OS X, and opens your `.cshrc` file. The second command is the line on which you make additions to the text file. The third line, Control-`x`, is the exit command, which quits pico. The `y` tells

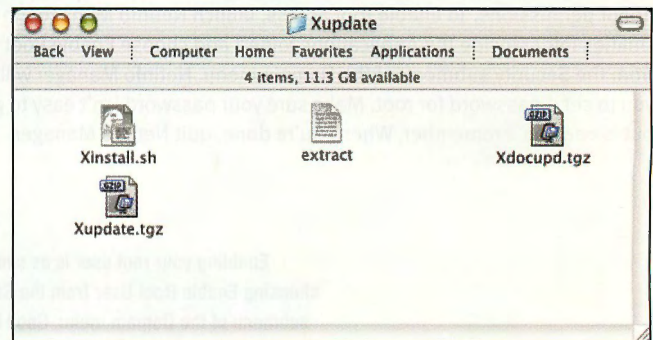
7 Run X

OK, folks—you're ready to run X. Choose Log Out from the Apple menu, and when the Login window appears, enter the user name `>console`. You won't need to enter a password. Once you've logged in this way, you're staring at the face of Darwin. Go ahead and log in, then get X running by typing the following command:

```
startx
```

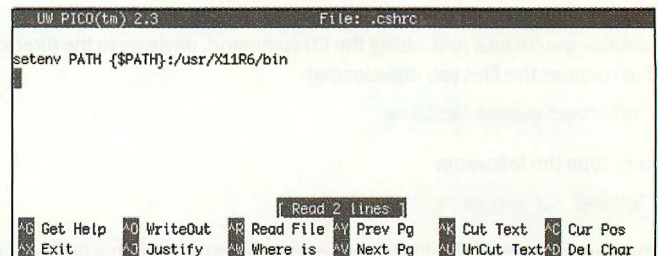
XFree86 will run, and should display a few windows and a mouse cursor. Congratulations! When you've tired of using X in root mode, type `exit` in the Login terminal window. If the screen appears frozen (XFree86 is far from bug free in Darwin), type `logout` and press Return, and all should be well with the world.

Yes, it looks like one of the radio-telescope monitors in *Contact*, but it's really a Mac—it just happens to be running the graphics program GIMP using XFree86.



Yup—you've just installed, and it's already time for an update.

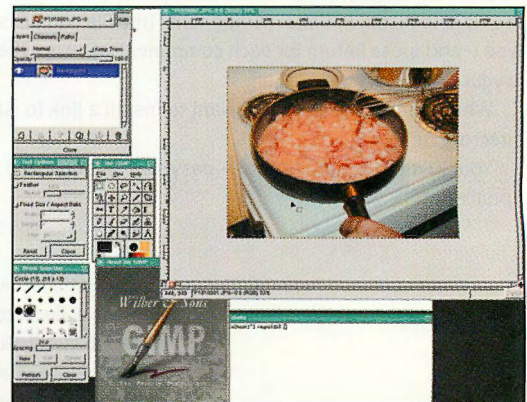
This should look familiar—you're running a script similar to the previous one, but this one updates your X Window installation to the 4.0.3 release. When the installer asks if you want to continue, type `y` and press Return.



Using the built-in text editor, pico, we add a single line to a text file, indicating the path to XFree86. This isn't necessary, but it will make life a whole lot easier.

pico to save changes before it quits. The fifth line, `tcsh`, starts a new shell, which forces the terminal to reread the newly edited `.cshrc` file. Finally, the last command shows a series of file paths in your terminal so you can make sure everything worked. One of the paths should be `/usr/X11R6/bin`.

Note that if you're using bash, sh, or some other shell, you need to change your path in a different way (for example, you'd replace `setenv` in `.cshrc` with `export` in `.bashrc`). We assume that if you know enough to change shells, you know how to do this.



David Reynolds is now sick of the 24th letter of the alphabet.

MacAddict

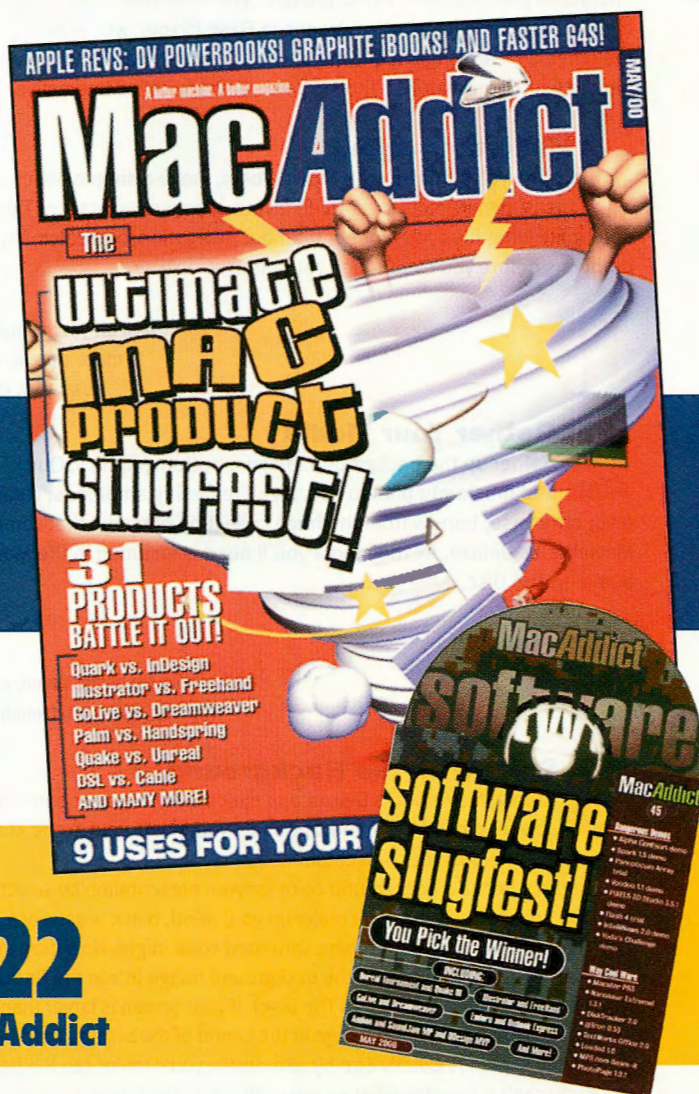
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5HHN9

Make MovieWorks Presentations

by Andrew Tokuda

WHAT YOU'LL NEED

- Interactive Solutions' **MovieWorks Deluxe** (\$129.95, www.movieworks.com)
- **MacAddict** tutorial files
- Design sense (optional)



Find a demo of MovieWorks Deluxe and the media files for this tutorial on The Disc.

Let's face it—watching presentations is usually about as much fun as watching *The English Patient* with the volume off (or, depending upon your tastes, with the volume on). If you throw in a little interactivity, however, that dull presentation might become downright entertaining! For years, Macromedia's Director (\$1,199, www.macromedia.com) was the program for creating interactive presentations. Unfortunately, it commanded a dauntingly high price. After Macromedia introduced Flash (\$399), would-be multimedia creators had a second option, but Flash was dauntingly hard to learn. Fortunately, a little-known company called Interactive

The Great Wireless Adventure



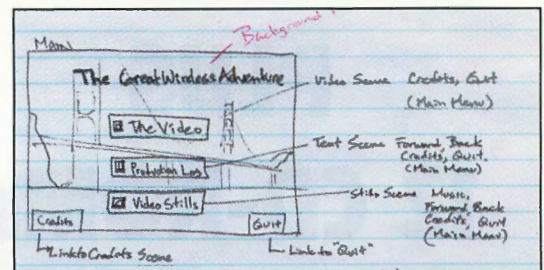
Ah, yes—a steel bridge and a wireless one.

Solutions has written a nice little program called MovieWorks that's both inexpensive and easy to use. So gear up, start coding, and before you know it your grandparents will be pleading with you to stop sending them interactive greeting cards.

Just to show you how easy multimedia authoring can be, we'll take an event in history and turn it into a multimedia presentation. We chose the day we left the *MacAddict* offices to play hooky and photograph a famous red bridge, plus test a wireless device so we could claim we were working. All you need for this tutorial is MovieWorks and the tutorial files included on this month's Disc.

1 Make the Layout

Before you sit down with MovieWorks, make a simple pencil-and-paper (use a pen if you're a gambler) layout of your presentation. This will help you determine what files you'll need, map out navigation, and catch any design problems before you even touch your mouse.



Turn off your computer—it's easier to make a presentation if you nail down your ideas in advance.

2 Gather Your Media

Gather up the background images, button graphics, QuickTime movies, and music you plan to use. If you're feeling ambitious, create your own; otherwise, borrow from the huge collection of media that comes with MovieWorks Deluxe. All the media you'll need is included in the MovieWorks demo on The Disc.

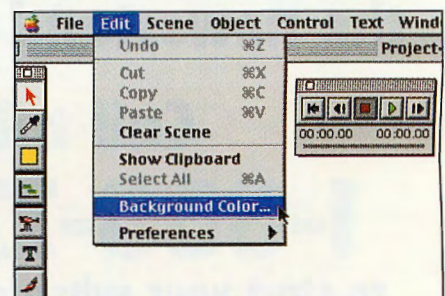
Gather your graphics, sound, and QuickTime movies before you launch MovieWorks.



3 Start with the Background

Launch MovieWorks Deluxe and click the New Project button in the initial splash screen. When MovieWorks prompts you, name your scene *Main Scene*. This will serve as the centerpiece of your presentation.

To start, choose a background color for your presentation by selecting Background Color from the Edit menu. If you can't make up your mind, black is usually a good choice—it doesn't clash with images the way a bright, saturated color might. Now drag the file Background1.pct into the Project window to add the background image (it's in the Backgrounds folder, which you'll find in the Media folder on The Disc). If your screen is larger than 640 by 480 pixels, you should see your background image in the center of the screen, bordered by the background color. If the screen is exactly 640 by 480 pixels, you'll never see the background color—but since you can't guarantee what viewers will use in the future, it's best to be cautious.

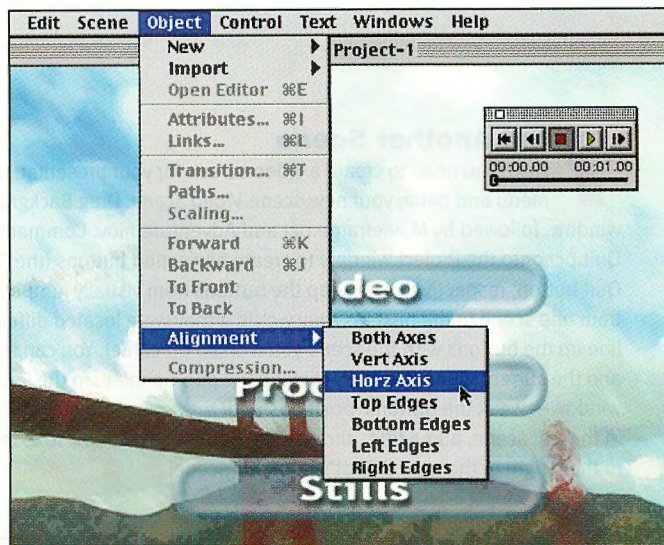


Always choose a background color for your projects in case you have viewers with large screens.

4 Make Buttons

Next, hold down the Command key and drag the following files from the Buttons folder on The Disc into your Project window: Credits.pct, Productionbutton.pct, Quit.pct, Stills.pct, and Videobutton.pct. Holding down the Command key while dragging a picture into MovieWorks tells the program it should treat these graphics as buttons rather than regular picture files (buttons are images to which you can attach actions or links). Drag the buttons to the places onscreen where you want them to appear (you can use the arrow keys to move them in 1-pixel increments if you need finer control). Line up the Credits and Quit buttons—first shift-click to select both buttons, then choose Horz Axis from the Alignment submenu of the Object menu.

Let MovieWorks line up images for you.

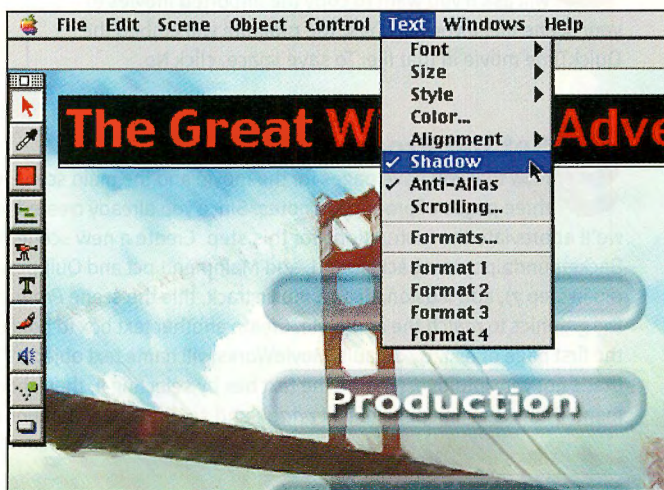


5 Title the Movie

Now you need to add a title. Click the text tool (it resembles an outlined T) from the vertical toolbar to bring up a text field. Type *The Great Wireless Adventure* in the text field. Next, press Command-A to select all the text, then change the font, color, size, and style using the appropriate submenus of the Text menu. Once you've got the text looking as you wish, click outside the text box, then drag the box to the top of the Project window.

If you have a large number of buttons, you may run into trouble—buttons can completely obscure text elements! If this happens, just choose a larger text size from the Size submenu of the Text menu to reveal some of the text, then move it away from the buttons.

Adding a shadow to titles can make the text stand out.

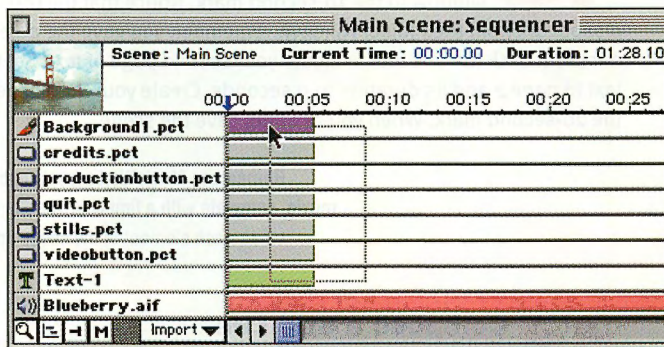


6 Add Music

To add music, begin by dragging Blueberry.aif from the Music folder (again in the Media folder on The Disc) to your Project window.

MovieWorks treats each scene as a movie that runs as long as its longest-running element. As you added the graphics in the last three steps, MovieWorks automatically chose a fixed length of time to leave them onscreen. Since that time was identical for all your graphics, this worked fine before—when you reached the end of a scene, the movie would stop, leaving all your graphics onscreen. Now that you've added music, though, you have to make sure it doesn't outlast your graphics, leaving your viewers with a very dull presentation indeed!

To fix the problem, click the sequencer button (it looks like two offset green bars bordered below and to the left by black) in the vertical toolbar. You should see a list of your presentation's elements, with colored bars to the right of each element. Blueberry.aif should have a longer bar than the other elements. Choose 3x from the zoom menu (the icon is a magnifying glass; it's in the lower-left corner of the sequencer window); this should zoom out the window so you can see the entire length of the audio file. Drag to select the horizontal bars that represent the timelines of your movie's

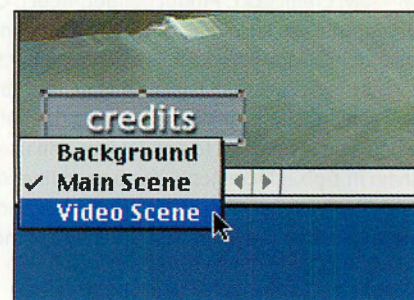


Drag to select the graphic files, then click the Extend To End button.

graphical elements (drag from right to left to avoid accidentally touching a bar when you first click). Once you select the graphics elements' bars, click the Extend To End button (a sideways T) in the lower-left corner of the Sequencer window. Extend To End tells the graphics files to stay onscreen until the end of the scene, guaranteeing that they'll remain in view when the music ends. After you finish your first scene, save your movie by choosing Save from the File menu. Name your project *Presentation Project*. This will create two files—a project file and a scene file—in a folder called Presentation Project.

7 Set Another Scene

Next, you need to create a video screen for your presentation. Select New from the Scene menu and name your new scene *Video Scene*. Drag Background2.pct to your Project window, followed by Movieframe.pct and Adventure.mov. Command-drag Mainmenu.pct and Quit.pct onto the Project window to create navigation buttons (the Main Menu button and the Quit button, respectively). To keep the buttons from visually jumping around when people move from one scene to the next (as they would if they were located differently from scene to scene), line up the buttons with the scene you worked on earlier. You can toggle between the Main Scene and the current Video Scene by clicking the pop-up menu in the lower-left corner of the Project window—tweak the buttons' positions until they appear to stay still as you switch scenes. Just as in the last scene, add a title, and use the Sequencer window to extend the length of the graphics to the length of the movie. That's it for this scene!



To align elements between two different scenes, use the pop-up menu to toggle between scenes.

8 Save Again

Save the project by pressing Command-S. MovieWorks will ask if you want to copy the imported movies to your scene file. If you click Yes, the program will embed the QuickTime movie in that file. To save space, click No.

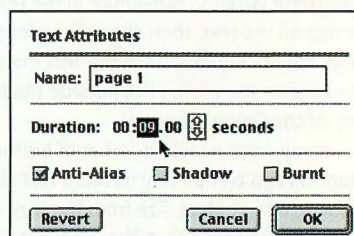
Some of your scenes have imported movies.
Do you want to copy these movies?

Some... No Cancel Yes

If you embed the movies, you won't risk separating the movies and the presentation—but it takes more room.

9 Set the Production Scene

Now that you have pages for the movie and the main scene, create a scene that will display three pages of production notes. Since you already created two scenes, we'll abbreviate the instructions for this step. Create a new scene titled *Production Scene*, use Background2.pct as a background, add Mainmenu.pct and Quit.pct as buttons (position them as you did in step 7), add Illusion.aif as a music track, title the scene *Production Log*, and extend the length of the graphics to match the audio file. Create another text box to hold the production notes, and type in the first page of text. By default, MovieWorks will name text objects "Text-1," "Text-2," and so forth. Since that's not very intuitive, rename the text box by selecting it, then choosing Attributes from the Object menu. Name the first page of text *page 1* and set the poster duration to 9 seconds.

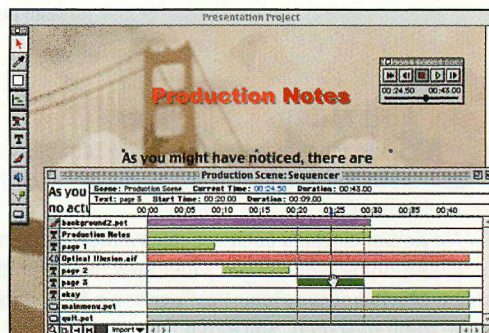


Name your text object and give it a 9-second duration.

10 Add the Other Pages

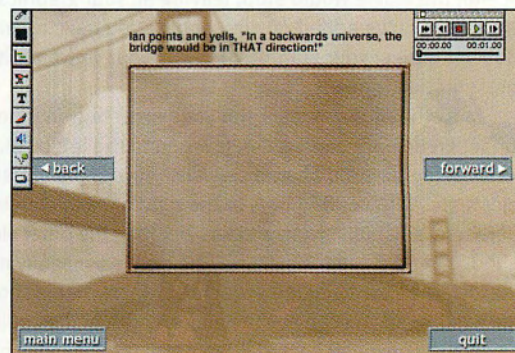
To add a second page of text, drag the blue arrow in the Sequencer window to the 10-second mark. Notice that the text object (page 1) disappears from the Project window; remember, you gave the object a 9-second duration. Click the text tool to create your second page of text. Set the name of the text to *page 2* and its duration to 9 seconds. Create your third page, and start it at the 20-second mark. When you're done, save the scene.

Remember, MovieWorks treats each scene as a miniature movie, complete with a timeline. The Sequencer lets you control when each element of the scene appears and disappears.



11 Compose a Still Life

Let's make a page that will display a slide show of still images. Since MovieWorks doesn't let you link buttons to points on the timeline, you need to create a separate scene for each page of stills. Create a new scene, name it *Stills 1 Scene*, and add Background2.pct and Movieframe.pct in that order (you want Background2.pct to appear behind Movieframe.pct). Command-drag Back.pct, Forward.pct, Mainmenu.pct, and Quit.pct to the Project window and position them appropriately. Position the Back button to the left of the frame graphic and the Forward button to the right. Add some text to describe the first picture you plan to add (you'll actually add the picture later). Save the scene.

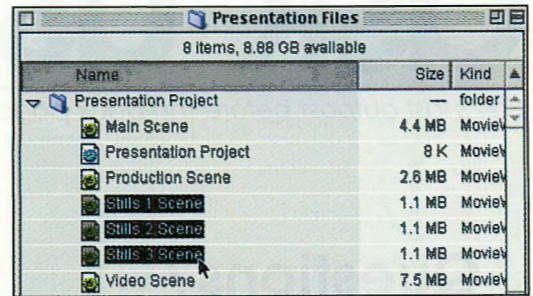


This scene will act as a template for two other scenes.

12 Go from Still to Stills

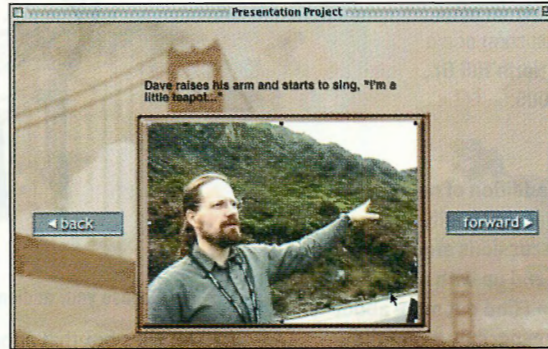
After you create a template for the three pages of stills, you can just duplicate it to create the other two pages. Move back to the Finder and make two copies of *Stills 1 Scene* by selecting the file and pressing Command-D twice. Rename the copies *Stills 2 Scene* and *Stills 3 Scene*. Go back into MovieWorks Deluxe and select Import from the Scene menu, then import *Stills 2 Scene* and *Stills 3 Scene*. Your project should now contain three identical scenes you can use to build the stills pages.

Make two new copies of the scene and rename them.



13 Add the Stills

Select *Stills 1 Scene* from the pop-up menu in the lower-left corner of the Project window. Select the Back button and press Delete (you can't go back from the first page). Drag *Ianpoints.pct* to the Project window. Now go to *Stills 2 Scene*, drag *Davepoints.pct* to the Project window, and type in a new description for that picture (isn't it nice not having to reformat text?). Go to *Stills 3 Scene*, delete the Forward button, drag *Imian.pct* to the Project window, and type in a new description.

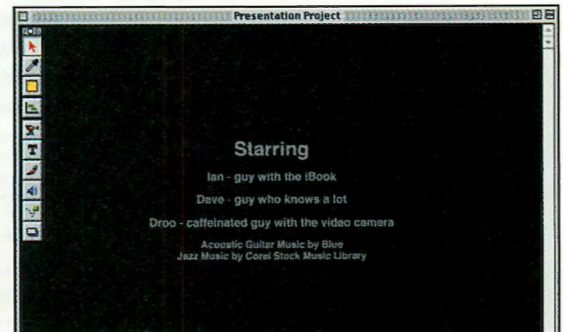


Make scene building easier by eliminating and replacing objects.

14 End with a Credits Scene

As you've now completed all the necessary steps to build a scene several times, building the last scene, which rolls the credits, should be very easy. Name the new scene *Credits Scene*, so you can follow along for the rest of the tutorial. Add the usual background, title, and buttons, and add a text box that says you made the presentation. Congrats—you've made all of your presentation's scenes!

Add text, add buttons. By now, you should be able to do this with your eyes closed.

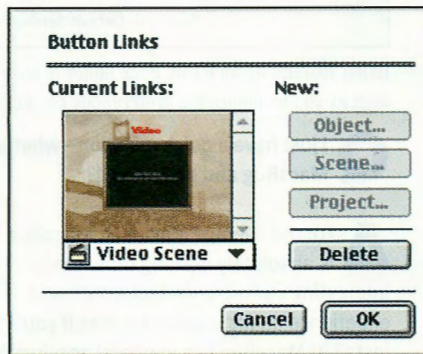


15 Button Up

You're nearly there; all that's left is to configure all those buttons you added in the previous steps. In the main scene, click the Video button and select Links from the Object menu. Click the Scenes button in the dialog box that appears. Choose Video Scene from the pop-up menu at the bottom of the Add Scene Link dialog box and click OK twice (once to dismiss the Add Scene Link dialog box and again to dismiss the Links dialog box). For the Production button, choose Production Scene; for the Stills button, choose Stills 1 Scene; and for the Credits button, choose Credits Scene. To make the Quit button stop the presentation, select its graphic, choose Attributes from the Object menu, and click the Quit radio button in the Attributes dialog box.

Link the rest of the buttons as shown in the "Link It Up" table. When you're done, test out your project by choosing Make Player from the File menu (this creates a distributable player application that allows others to see your presentation.) If it works (that is, if you didn't make any mistakes in adding button links), you're done—congratulations!

If your presentation doesn't work, you need to track down what went wrong. This can be a long and tedious process (programmers call it *debugging*; some of the earliest computers literally had problems with insects getting inside!), but the solution is often simple. If a button doesn't work, for example, odds are you just missed it when you were adding links and attributes; it shouldn't take you more than a few seconds to fix the problem.



Creating a scene link is as easy as clicking a mouse.

Link It Up

BUTTON	LINK OR ATTRIBUTE
Video Scene	
Main Menu button	link: Main Scene
Quit button	attribute: Quit
Production Scene	
Main Menu button	link: Main Scene
Quit button	attribute: Quit
Stills 1 Scene	
Forward button	link: Stills 2 Scene
Main Menu button	link: Main Scene
Quit button	attribute: Quit
Stills 2 Scene	
Back button	link: Stills 1 Scene
Forward button	link: Stills 3 Scene
Main Menu button	link: Main Scene
Quit button	attribute: Quit
Stills 3 Scene	
Back button	link: Stills 2 Scene
Main Menu button	link: Main Scene
Quit button	attribute: Quit
Credits Scene	
Main Menu button	link: Main Scene
Quit button	attribute: Quit

ask us

Editor's last outpost before the back page.

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o **MacAddict**, 150 North Hill Dr., Brisbane, CA 94005.

Q With the addition of our new Flower Power iMac, my family and I are now Mac addicts. Discussions around the dinner table inevitably end up with a Mac trivia contest. How can I find out more about Apple's history, especially about the creation of the Macintosh? I know they'll all be stumped!

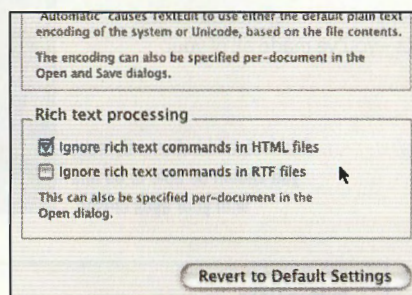
A You're in luck—Apple's 25-year history has had enough drama to fill many, many books and Web sites. For the best dinnertime conversation, get your hands on a copy of Owen Linzmayr's impeccable *The Mac Bathroom Reader* (www.owenink.com). This 300-page book (now in its seventh printing) never gets old. For the Web-surfing Macaholic, a few important sites should give you your fill of Apple's history. The wonderful www.apple-history.com gives complete information not only about the company's history, but also about nearly every computer Apple ever made. If you're more interested in the Macintosh itself, get ready for a long stay at Stanford University's Macintosh history library (<http://library.stanford.edu/mac/index.html>).

Q I want to use the TextEdit application included with Mac OS X to edit my HTML documents, but when I open them, they render as Web pages. How can I have TextEdit show HTML documents as text?

A Despite the name, TextEdit isn't just a text editor. If you open an HTML document, TextEdit will attempt to render it correctly, including graphics and links. While rendering HTML is certainly a nifty feature, it makes life a bit difficult for anyone who simply wants to edit an HTML file!

Fortunately, turning off TextEdit's hypertext enthusiasm isn't very difficult. Choose Preferences from the TextEdit menu, then check the Ignore Rich Text Commands

In HTML Files box that appears in the lower-right corner of the dialog box. Alternatively, you can open the document from within TextEdit; the Open dialog box includes a check box that lets you ignore rich-text commands.



Using TextEdit as an HTML code editor is easy as long as you configure the preferences correctly.

Q I just have a quick question—what is MacsBug and do I need it?

A For the average Mac user, MacsBug is absolutely nothing other than an interesting curiosity—in fact, you might experience an *increase* in crashes if you install it! MacsBug is a low-level application-debugging tool (the name is a contraction of Motorola Advanced Computer Systems Debugger). Using a series of cryptic commands (if you think Mac OS X Terminal commands are cryptic, be warned—they're nothing compared to MacsBug's commands), developers can find out a system's exact state and record all the gathered information in a text file for further analysis. Many developers use MacsBug to figure out why their software is crashing.

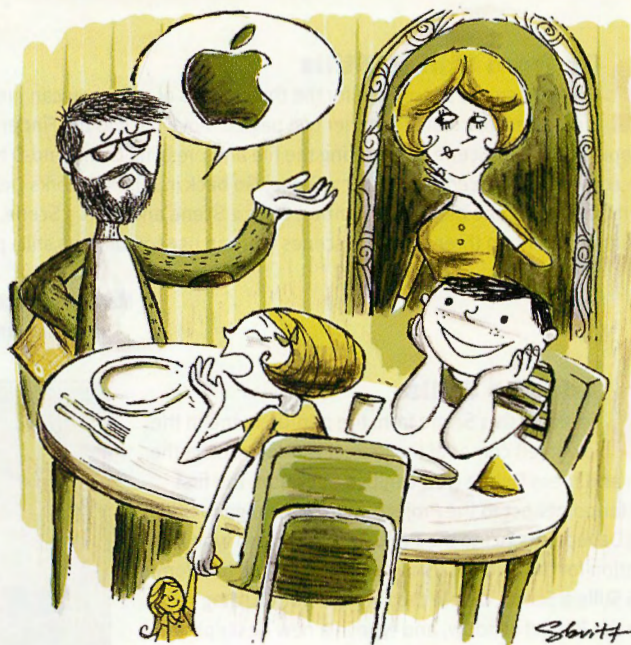
When a computer with MacsBug installed crashes, MacsBug's command-

line environment replaces the traditional bomb. The fact that MacsBug lets you poke around in your computer's innards makes it great fun, particularly for folks who know a bit about Macintosh Toolbox programming. If you're curious, download MacsBug from Apple's developer site on the Web (<http://developer.apple.com/tools/debuggers/MacsBug>).

Q I use separate extension sets for playing games. Is there a way I can choose my configuration during startup?

A Creating a gaming-specific extension set in the Extensions Manager control panel is a great way to speed up games. By only turning on absolutely necessary extensions, you can free up system resources and available memory, giving your game as much room as possible. A nice bare-bones set that includes just the OpenGL extensions, the various Game Sprockets, and a few hardware drivers works very well.

You can switch sets in two ways—hold down the spacebar at startup to bring up Extensions Manager during the boot process, or use Location Manager. We'll focus on the latter technique, as it's the more elegant solution. The Location Manager control panel was originally designed for mobile computer users so they could quickly adapt to the various places where they use their notebooks (for example, people typically have an Ethernet connection at work and a modem at home). Create two different locations in the Location Manager, one representing your normal system configuration, the other



Choose your audience carefully before you start telling your longer Apple stories.

ILLUSTRATION BY S. BRITT

representing your game setup (see "Relocate with the Location Manager," Sep/00, p86). Next, choose Preferences from the Edit menu, and set the Location Manager to always ask for a location at startup. Now, every time you restart, your Mac will ask which setting to use.

Q How can I create ligatures on my Mac?

A Ligatures occur when certain adjacent character pairs combine to form a new character. These characters are especially important to typesetters and designers, since many fonts have really beautiful ligatures that can greatly add to the elegance of a layout and eliminate awkward pairings. The two most common ligatures are formed by the *fi* and *fl* combinations, which yield *fi* and *fl*. Most fonts contain these ligatures; press Shift-Option-5 for the *fi* ligature or Shift-Option-6 for *fl*. You can easily find these hidden characters by choosing Key Caps from the Apple menu. The Key Caps application displays a picture of your keyboard showing what characters map to what keys; if you hold down Shift, Option, or both, the keyboard updates to show what characters you'd get if you pressed a key while holding down those modifiers.

Q With all these build numbers, version numbers, extensions, frameworks, and whatnot in Mac OS X, I'm totally losing track of what's in my system! Is there any way I can figure out what version my system is?

A As long as you keep things simple, finding out the system version is just as easy as ever—just choose About This Mac from the Apple menu, and you'll get a dialog box showing you the system's version and build number. Easy, right?

Sadly, things can get a *lot* more complicated than that. As with older Mac OS versions, sometimes third-party software will upgrade specific system components without bringing along the rest of the system. With all the frameworks and extensions that make up Mac OS X, figuring out whether your system is up to snuff can be an exercise in frustration.

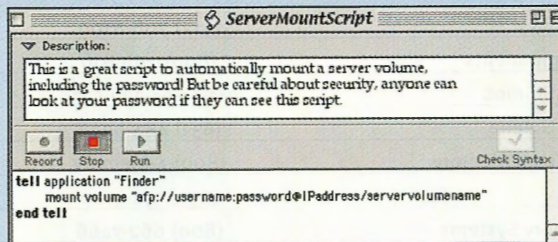
Fortunately, Apple has been putting a lot of work into solving the problem. Apple updated the hoary Apple System Profiler for Mac OS X; you should find a copy in the Utilities folder in your Applications folder. While the utility may look the same at first glance, note the two tabs at the top of the window labeled Frameworks and Extensions.

On the Web

In the past, we've discussed different methods for automatically logging on to AppleShare servers in Mac OS 9. We neglected to describe one nifty little solution: Thanks to an AppleScript addition that first shipped with Mac OS 8.5, you can write a simple script that will automatically log into an AppleShare server quite easily (replace username, password, IP address, and servervolumename with the appropriate information for your server):

```
tell application "Finder"
mount volume "afp://username:password@IPaddress/servervolumename"
end tell
```

If your machine is running a pre-8.5 system, head over to www.lazerware.com/software.html and get the scripting additions you'll need to pull this off.



Don't forget about AppleScript—it's astonishing how many different sorts of problems it can solve.

Frameworks are shared libraries that applications can use to access system features (DrawSprocket is a good example of a framework). Extensions are files that load directly into the OS; they can actually cause hard crashes if they're buggy. Mac OS X only uses extensions to implement hardware drivers (and just those that wouldn't work otherwise). Click either of the two tabs to see the version numbers for the frameworks and extensions installed in your system.

If you want the version of the kernel that sits at the very heart of your system, launch the Terminal and type `uname -a`. Among the various pieces of system information that the command displays, you should find a version number for xnu, Apple's name for the innermost core of Mac OS X.

Name	Version	Is Apple
AGL.framework	1.2.20 (486-1.2.20)	
AppleScript.framework	0.0.0.0	
AppleScriptClient.framework	1.0.0 (1.0.0)	Yes
AppleScriptUI.framework	1.0.0 (1.0.0)	Yes
AE.framework	1.0.0 (1.0.0)	
FindMyCool.framework	1.0.0 (1.0.0)	
LaunchServices.framework	1.0.0 (1.0.0)	
PrintCore.framework	1.0 (1.0)	
SystemConfiguration.framework	0.0.0.0	
AudioToolbox.framework	1.0.0 (1.0)	
AudioUnit.framework	1.0 (1.0)	
Carbon.framework	0.0.0	
CoreServices.framework	1.0.0 (1.0)	Yes
Help.framework	1.0 (1.0)	Yes
HTMLRendering.framework	1.1 (1.1)	Yes
ICCardBus.framework	1.0 (1.0)	
NavigationServices.framework	0.0.0.0	
NSC.framework	1.2.0 (1.2.0)	
OpenScripting.framework	1.0.0	
Print.framework	0.0.1 (0.0.1)	
Security.framework	1.0 (Security 1.0)	
SpeechRecognition.framework	0.0 (0.0)	
URLAccess.framework	0.0 (0.0)	Yes

These frameworks collectively give Mac OS X the features that make it more powerful than your average Unix.

Q I've heard that Mac OS X is running Apache as its Web server. Is this true, and if so, is it extremely difficult to get up and running?

A Mac OS X does indeed include Apache as its default Web-serving software. While this is the same Apache you'll find in most Unix-derived systems, Apple provides a nifty tool that starts and stops Apache; you'll find it in Mac OS X's Sharing Preferences pane. Just click the Start button next to Web Sharing and Apache promptly fires up.

Once it's running, Apache works much as it would on any Unix-based system. Each user gets a personal Web site (in his or her home directory's Sites folder). You can access this by browsing to your machine with a URL consisting of your IP number (you can look this up in the Network Preferences panel), followed by a slash, a tilde, and your user name (for example, if your IP number were 192.168.0.1 and if your user name were *username*, you'd get to your site at <http://192.168.0.1/~username>). Remember to create a default document called `index.html` that users will see first, and remember that Unix is case sensitive, so typing `mypage.html` won't necessarily find `MyPage.html`. Thanks to Apache's presence, you can let Mac OS X handle the tough stuff so you can get on to more important things—like actually creating content.

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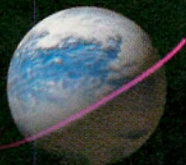
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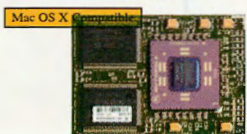
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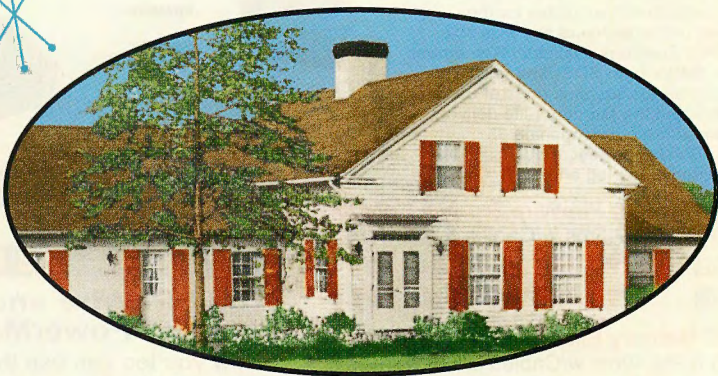
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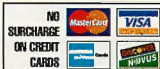
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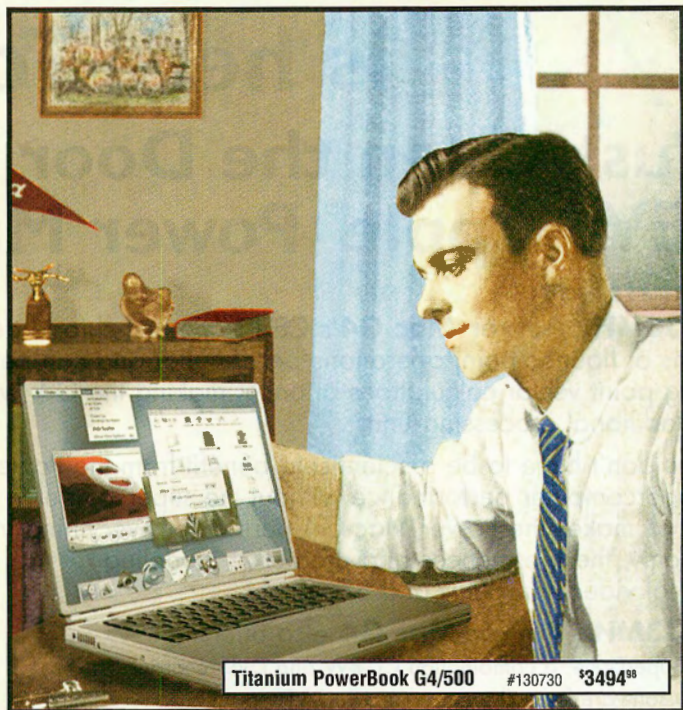


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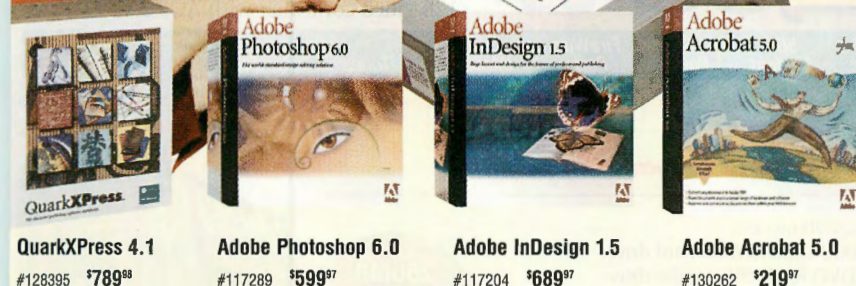
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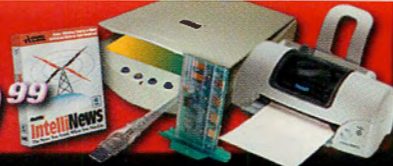


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#959627	500MHz G3	128MB	128MB*	256MB	10GB	Yes	DVD-ROM	2	1	Yes	Yes	\$1,494*	\$42/mo*
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Indigo (#957490)	
MHz	400
RAM	64MB
FREE RAM	64MB
TOTAL RAM	128MB
Hard Drive	10GB
CD-ROM	YES
56K Modem	YES
USB Ports	2
FireWire Ports	2
iTunes & iMovie 2	YES

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Flower Power (#957493), Blue Dalmatian (#957492), Indigo (#957491)	
MHz	500
RAM	64MB
FREE RAM	128MB
TOTAL RAM	192MB
Hard Drive	20GB
CD-RW	YES
56K Modem	YES
USB/FireWire Ports	2
iTunes & iMovie 2	YES

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Flower Power (#957496), Blue Dalmatian (#957495), Graphite (#957944)	
MHz	600
RAM	128MB
FREE RAM	128MB
TOTAL RAM	256MB
Hard Drive	40GB
CD-RW	YES
56K Modem	YES
USB/FireWire Ports	2
iTunes & iMovie 2	YES

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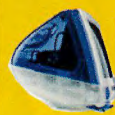
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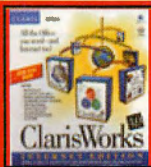


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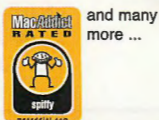
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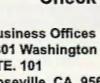


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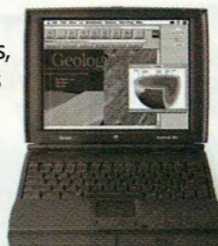
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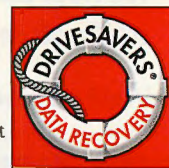
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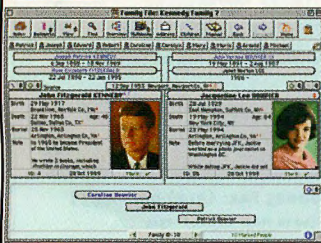
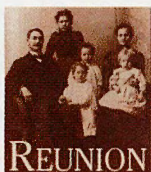
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Psychic Expo Coverage

MacAddict is proud to bring you this coverage of Macworld Expo—before it happens!

- In his keynote address, Apple CEO Steve Jobs will announce a new version of Mac OS X. He will then overuse the phrase “Power of Unix with the simplicity of the Mac” until marketing-sensitive people develop nosebleeds.
- Vendors with OS X-based products will avoid running any older operating systems on their Macs. Those that haven’t Carbonized their apps will carefully avoid letting any trace of Mac OS X slip into their booths, and will hire armed guards to escort anyone mentioning the new OS back to the hot-dog stand and detention area.
- About six new games will be presented on the show floor, of which two will be spectacular, two will be quite good indeed, and two will have been destroyed in the rush to get them ready for release at the show.
- At least one hapless hardware vendor will inadvertently set up a booth to show off a piece of hardware that lacks Macintosh drivers. At least 20 vendors will be showing Mac-compatible products that lack Mac OS X drivers—these poor souls will be surrounded by angry mobs of would-be X-ites who demand that the PR folks manning the booths write Mac OS X drivers on the spot.

US News & Dungeon Report **QJR2**

Microsoft loses 5,500 Windows XP

REDMOND, WA—Microsoft today announced that it lost 5,500 Windows XP when a Windows vampire attacked the company. According to a company press release, the company failed its saving throw when the vampire attacked, causing it to revert to eighth level and lose the 5,500 Windows XP it had accumulated.

“It’s a real bummer, man,” commented Microsoft spokesman Tim Forasco. “We totally thought we had that sucker nailed, but he was, like, hiding in this supersecret coffin that we didn’t spot until it was too late.”

Beside the Windows XP loss, Microsoft has lost its coveted title of Evil Monopoly; until the level drain is reversed, it will simply be referred to as Looming Corporate Giant. Microsoft hopes to recover many of the lost Windows XP in the fourth quarter during a quest to exterminate a 10HD open-source project.

MacAddict Corrections

+ In the last issue, we claimed that Microsoft was “...an evil, self serving company with monopolistic tendencies.” We apologize for the error—“self-serving” is a compound adjective and we, of course, should have hyphenated it.

+ Over the last five years, we repeatedly have referred to back issues using an abbreviated format: Feb/01, for example. This format is not Y2K compliant; we apologize to any readers tricked into searching for the February 1901 issue of *MacAddict*.

+ In a fit of coffee-induced hallucinations, Senior Editor Ian Sammis attempted to incorporate a modified cigarette lighter into the foam-core scoop of Hot-Rod Elsie, one of the nitro-burning funny Macs in our July 2001 issue. He would like to apologize to Editor in Chief David Reynolds, Associate Editor Kris Fong, and the Brisbane Fire Department. **QJR3**

The Joy of Tech

by Nitrozac & Snaggy



The Obscure Joke Reference

1. In the 1985 movie *Better Off Dead*, Charles De Mar (played by Curtis Armstrong) memorably bellowed, “It’s pure snow!” at the top of a ski run. It was funny.
2. When Microsoft announced that the next version of Windows would be called Windows XP, Advanced Dungeons & Dragons fans chortled—in AD&D parlance, XP stands for eXperience Points, the points players earn when they defeat monsters or solve puzzles. The joke here hinges upon the fact that players can actually lose XP when attacked by certain monsters (like vampires). *US News & Dungeon Report* is from the classic seventies text adventure, *Dungeon*.
3. David Reynolds began building the funny-car Mac, but the birth of his son, Jake Reynolds, prevented him from completing it. Kris Fong completed the project.

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